

CORREO DE VOZ MERIDIAN NORSTAR STARTALK

CARTILLA DEL USUARIO:

- Información preliminar: Esta cartilla enseña como usar el Correo de Voz Meridian. Explica los códigos de funciones; como inicializar su apartado y también explica algunas funciones que puede usar directamente.

Todos los teléfonos norstar proveen avisos grabados. En los teléfonos que poseen teclas debajo de la pantalla Ej. M7310, los avisos demoran aproximadamente cinco segundos en ser reproducidos.

Si usted no visualiza en la pantalla alguna opción, usted puede esperar por el aviso y escuchar las opciones adicionales.

Usted puede usar las funciones del correo de voz meridian presionando las teclas debajo de la pantalla del teléfono o marcando el número (1,2,3, *, #.) en la botonera de marcación. Esta cartilla le muestra ambas teclas.

De modo que cuando usted vea lo siguiente:

PLAY ó 2

Usted puede presionar cualquiera de ellos para activar funciones del correo meridian.

ANTES DE USAR EL CORREO DE VOZ:

- Antes de usar el correo meridian.
- Antes de comenzar a usar el correo meridian, usted deberá hacer lo siguiente:
 - Inicializar su apartado.
 - Grabar su saludo primario para uso diario.
 - Grabar su saludo alternativo para usar cuando usted se encuentra lejos de su oficina, debido a enfermedad, vacaciones o por motivos especiales.

CODIGOS DE FUNCIONES

Los códigos de funciones se usan solamente en teléfonos norstar con pantalla. Un código de función es usado para dejar un mensaje, abrir su apartado, determinar el número de extensión del correo de voz meridian y

transferir una llamada a un apartado. Hay cuatro códigos de función usados frecuentemente:

Dejar mensaje	:	Función 980
Abrir apartado	:	Función 981
Determinar No ext. correo	:	Función 985
Transferir	:	Función 986

Los códigos de función pueden ser programados en su teléfono usando la Función * 3 y marcados como por ejemplo "Dejar mensaje", "abrir apartado".

Cuando usted esté lejos de su oficina puede acceder a su correo meridian desde cualquier teléfono con botonera de marcación por tonos.

Los códigos de función que aparecen en esta cartilla son programados durante la instalación del sistema correo meridian. Eventualmente podrían ser cambiados. En este caso el coordinador del sistema deberá informar al respecto y usted grabará los códigos en la siguiente tabla:

OPERACION	NUEVO CODIGO DE FUNCION
Dejar mensaje	Función 9---
Abrir apartado	Función 9---
No ext. correo meridian	Función 9---
Transferir	Función 9---

FUNCIONES DE APARTADO

Su apartado: Antes de usar su apartado, usted deberá hacer lo siguiente:

- Abrir su apartado.
- Cambiar su clave.
- Grabar su nombre en el directorio de la Compañía.
- Grabar sus saludos personales de apartado.

A este conjunto de procedimientos se le denominará inicialización del apartado de voz.

INICIALIZACION DEL APARTADO DE VOZ

1. Presione Función 981.
2. Ingrese la clave implícita 0000.
3. Al final de la clave presione OK o #.
4. Marque la nueva clave usando la botonera de marcación. Su clave puede ser de cuatro a ocho dígitos de longitud, pero no puede comenzar con el dígito 0.

5. Al final de la clave presione OK o #.
6. Para aceptar su nueva clave presione OK o #.
7. Después que usted ha aceptado su clave, será consultado para grabar su nombre en el directorio de la compañía. Al oír el tono grabe su nombre.
8. Al final de la grabación presione OK o #.
9. Para aceptar su grabación presione OK o #.

Para finalizar presione RLS.

Usted está listo ahora para grabar sus saludos personales, después que sus saludos son grabados, usted tiene la opción de elegir o el saludo primario o el saludo alternativo. Si usted no elige el saludo, se seleccionará automáticamente el saludo primario.

Nota: La inicialización de un apartado es realizado solamente la primera vez que se abre. Un apartado deberá ser inicializado por su propietario antes que puedan recibir los mensajes de voz.

FUNCIONES DE APARTADO

Sus Saludos.

Cada apartado tiene un saludo primario y un alternativo grabado por su propietario. Después que usted ha grabado sus saludos personales, puede elegir cual saludo será reproducido a un llamador que se encuentre con su apartado.

Grabación de un saludo. Para grabar sus saludos, usted primero deberá abrir su apartado usando el código de Función 981. Después que ha abierto su apartado siga el procedimiento:

1. Presione ADMIN u 8.
2. Para seleccionar la opción de saludos presione GREET o 2.
3. Para grabar su saludo presione RECORD o 1.
4. Elija el saludo a grabar presione PRIME para saludo alternativo.
5. Para grabar su saludo presione YES o 1.
6. Al oír el tono, grabe su mensaje. Recuerde hablar claramente a un ritmo que sea fácil de entender.
7. Para finalizar su grabación, presione OK o #.
8. Para aceptar esta grabación presione OK o #.

Elección de un saludo de apartado.

Si usted no elige un saludo, el correo meridian reproduce automáticamente el saludo primario.

Para elegir su saludo usted deberá abrir su apartado usando el código de función. Después que ha abierto su apartado siga el procedimiento:

1. Presione ADMIN, u 8.
2. Para seleccionar la opción de saludo, presione GREET o 2.
3. Presione CHOOSE o 2.
4. Seleccione que saludo reproducirá su apartado.

Para escuchar mensajes en su apartado.

Cada vez que usted abre su apartado, el correo de voz meridian reproduce cualquier mensaje de voz dejado por su coordinador del sistema e informa cuantos mensajes hay en su apartado. Los mensajes son reproducidos comenzando con algún mensaje urgente y enseguida el primer mensaje dejado.

Para escuchar los mensajes, usted deberá abrir su apartado con el código de función (Función 981) y seguir el procedimiento:

Para escuchar sus mensajes nuevos, presione PLAY o 2.

Para escuchar sus mensajes guardados, presione 6.

Su primer mensaje se reproduce. Mientras escucha un mensaje o después que se ha reproducido, usted puede hacer lo siguiente:

Reproducir nuevamente	<<<	<<<	o	1	1.
* Devolverlo 9 segundos	<<<		o	1.	
* Pausa y continuar				STOP	PLAY o 2 para pausa, luego 2 para continuar.
* Adelantar 9 segundos	>>>	o	3.		
* Saltar al final del mensaje	>>>	>>>	o	3	3 o #.
Reproducir un mensaje previo				4	
Dirigir el mensaje				COPY o 5	
Saltar al próximo mensaje				NEXT o 6 o #	
Reproducir fecha y hora impresa				7	
Guardar un mensaje				7 7	
Borrar un mensaje				ERASE u 8	
Responder a un mensaje				REPLY o 9	
Controlar el volumen				*	

Nota: * Aplica solamente mientras el mensaje está reproduciéndose. Después de escuchar los mensajes dejados en su apartado y al salirse no los borra, éstos serán guardados automáticamente.

NOTIFICACION DE MENSAJES FUERA DE LA OFICINA

Cualquier número telefónico o anunciador avisa a usted cuando hay mensajes dejados en su apartado. Esta notificación es habilitada en el correo de voz meridian por la clase de servicio asignada por su coordinador del sistema.

Nota: Usted puede administrar esta notificación desde cualquier teléfono con marcación por tonos. También puede dirigir notificación de mensajes a cualquier teléfono con marcación por tonos.

Para programar la notificación de mensajes fuera de la oficina deberá abrir su apartado y seguir el procedimiento:

1. Abrir el menú de administración del apartado, presione ADMIN u 8.
2. Abrir el menú de notificación de mensaje, presione 6.
3. Para programar la notificación de mensajes presione ADMIN o 1.
4. Para seleccionar una línea, presione LINE o 1.

Nota: Usted puede seleccionar también POOL o INTERCOM.

5. Ingrese un número de línea, pool o intercom, presione OK o #.
6. Para aceptar el número de línea, pool o intercom, presione OK o #.
7. Ingrese el número telefónico de destino.
8. Después de ingresar el número, presione OK o #.

El número telefónico, de destino no puede ser más largo que 30 dígitos. Mientras está ingresando el número telefónico puede marcar en la botonera números que representan el reconocimiento del tono de marcar u otra opción del número telefónico. Cuando el correo de voz meridian es instalado detrás de una PABX o Centrex y quiere accesar una línea de salida, deberá ingresar el comando para reconocer el tono de marcar. Por ejemplo.

Ingrese 9 para accesar una línea de salida.

Ingrese 4 para reconocer el tono de marcar.

Presione 2 para ingresar más dígitos.

Ingrese el número de destino.

Presione # para accesar dígitos especiales y cualquier pausa requerida.
Siga los avisos de voz.

Nota: Pausas deberán ser ingresados para activar la notificación por anunciador. Cada pausa ingresada tiene 4 segundos de duración.

9. Para aceptar el número, presione OK o #.
10. Para aceptar el tipo de destino a teléfono, presione OK o # y vaya al paso 12.

Para cambiar el tipo de destino a anunciador, presione CHNG o 1.

Nota: El tipo de destino puede ser un teléfono o un anunciador. El correo de voz meridiano selecciona automáticamente teléfono. Cuando se selecciona un anunciador una pausa deberá ser insertada. El número de pausas requeridas depende del sistema anunciador utilizado. Cuando el tipo de destino es anunciador vaya al paso 18.

11. Para aceptar el tipo de destino, presione OK o #.

Si el tipo de destino del mensaje es a un teléfono, usted deberá programar la hora de inicio.

12. Ingrese la hora que comienza la notificación de mensaje.
13. Presione AM o 1, PM o 2.
14. Para aceptar la hora de inicio, presione OK o #.
15. Ingrese la hora que da término la notificación de mensaje.

Nota: Este campo es de 4 dígitos cualquier hora y minuto de un dígito deberá ser precedido por un cero.

16. Presione AM o 1, PM o 2.
17. Para aceptar la hora término, presione OK o #.
18. Para aceptar los mensajes nuevos, presione OK o #.
Para cambiar los mensajes a urgentes, presione CHNG o 1.

Nota: La programación implícita, es mensajes nuevos. Esto significa que usted será notificado en cualquier momento que reciba un mensaje nuevo. El cambio de mensajes nuevos a urgente significa que usted será notificado solamente cuando reciba un mensaje urgente.

19. Para aceptar el tipo de mensaje, presione OK o #.

Para finalizar, presione RLS.

La notificación de mensajes fuera de la oficina comienza tan pronto como la hora de partida es alcanzada. Es una buena idea sincronizar la hora de partida con la hora en que usted se encontrará en el número telefónico de destino. Usted será llamado en cualquier momento que reciba un mensaje.

NOTIFICACION DE MENSAJES FUERA DE LA OFICINA

Deshabilitación

Para deshabilitar la notificación de mensaje, usted deberá abrir su apartado y seguir el procedimiento:

1. Abrir el menú de administración del apartado, presione ADMIN u 8.
2. Para acceder al menú de notificación de mensajes, presione 6.
3. Para escuchar las opciones, presione SELECT o 2.
4. Para deshabilitar la notificación de mensaje, presione CHNG o 1.

Para finalizar, presione RLS.

La notificación de mensajes fuera de la oficina está ahora deshabilitada.

PARA CAMBIAR LA PROGRAMACION DE LA NOTIFICACION DE MENSAJE FUERA DE LA OFICINA

Para cambiar la programación de la notificación de mensaje desde cualquier teléfono de marcación por tonos deberá primero abrir su apartado y seguir el procedimiento:

1. Abrir el menú de administración de apartados, presione ADMIN u 8.
2. Abrir el menú de notificación de mensaje, presione 6.
3. Para cambiar notificación de mensaje, presione ADMIN o 1.
4. Para seleccionar una línea, presione LINE o 1.

Nota: También puede seleccionar POOL o INTERCOM.

5. Presione CHNG o 1.
Si usted no desea cambiar la línea, presione OK o #.
6. Ingrese al nuevo número de línea.
7. Presione OK o #.
8. Para aceptar el nuevo número de línea, presione OK o #.
9. Para cambiar el número de destino, presione CHNG o 1.
Si usted no desea cambiar el número telefónico de destino, presione NEXT o #.
10. Ingrese el nuevo número telefónico de destino.
11. Al final del número, presione OK o #.
12. Para aceptar el número presione OK o #.
13. Para cambiar el tipo de destino, presione CHNG o 1.
Tipo de destino un teléfono un anunciador.
14. Para aceptar teléfono como tipo de destino, presione OK o #.

Nota: Cuando asigne anunciador como tipo de destino, vaya al paso 23.

15. Para cambiar la hora de inicio, presione CHNG o 1.
Si no desea cambiar la hora, presione NEXT o #.
16. Ingrese la hora en que la notificación comienza.

Nota: Este campo es de 4 dígitos, cualquier hora y minuto de un dígito deberá ser precedido por un cero.

17. Presione AM o 1, PM o 2.
18. Para aceptar la hora de inicio, presione OK o #.
19. Para cambiar la hora de término, presione CHNG o 1.
Si no desea cambiar la hora, presione NEXT o #.
20. Ingrese la hora en que la notificación termina.
21. Presione AM o 1, PM o 2.
22. Para aceptar la hora de término, presione OK o #.
23. Para cambiar el tipo de mensaje, presione CHNG o 1.
24. Para aceptar el tipo de mensaje, presione OK o #.
Para finalizar presione RLS.

PARA DEJAR UN MENSAJE EN UN APARTADO

Usted puede dejar un mensaje directamente en cualquier apartado del correo de voz meridian tan pronto como ese haya sido inicializado por su propietario. Para dejar un mensaje puede usar la función dejar mensaje (Función 980) o la función abrir apartado (Función 981).

OPCIONES DE REPARTO DE MENSAJES

El correo de voz meridian le provee cuatro opciones de reparto de mensajes:

- | | |
|----------------------|---|
| Certificado CERT o 1 | Esta opción envía a usted notificación que su mensaje ha sido recibido y escuchado. |
| Urgente URGENT o 2 | Esta opción marca el mensaje, lo reproduce antes de otros mensajes dejados en su apartado. |
| Privado PRIV o 3 | Esta opción previene que el mensaje sea dirigido a otro apartado. |
| Normal SEND o # | Esta opción envía un mensaje a un apartado.
Mensajes normales, son reproducidos según el orden que son recibidos y pueden ser dirigidos a otros apartados. |

Después que ha grabado su mensaje en el apartado, presione 3 para acceder las opciones de reparto, entonces presione el apropiado número de opción.

Nota: Cuando deje un mensaje usted puede presionar 9 para escuchar los avisos grabados en un lenguaje alterno.

Para dejar un mensaje usando el código de función dejar mensaje.

1. Presione Función 980.
2. Ingrese el número del apartado o número de grupo de apartados.

Nota: Si usted no conoce el número de apartado, presione DIR o # para usar el directorio de la compañía.

3. Después que usted ha ingresado el número de apartado la pantalla le muestra el nombre del propietario del apartado.
4. Para dejar su mensaje, presione OK o 2.
5. Al oír el tono, grabe su mensaje. Recuerde, debe hablar claramente a un ritmo que sea fácil de entender.
6. Al finalizar su grabación, presione OK o #.

Nota: Después de grabado el mensaje, usted puede grabarlo nuevamente, reproducirlo o presionar SEND.

7. Para las opciones de reparto, presione 3.
8. Para marcar el mensaje, presione CERT o 1.
URGENT o 2.
PRIU o 3.
9. Para seleccionar otra opción de reparto, presione OPTS o 3.
10. Para enviar su mensaje, presione SEND o #.
Usted puede colgar el auricular para enviar su mensaje, cuando hace esto, el mensaje es puesto usando la opción NORMAL.

PARA DEJAR UN MENSAJE USANDO EL CODIGO DE FUNCIÓN, ABRIR UN APARTADO

1. Presione Función 981.
2. Ingrese su clave personal.
3. Para aceptar su clave, presione OK o #.

Nota: Después que usted ingresa su clave, la pantalla muestra su nombre.

4. Presione REC o 3.
5. Al oír el tono, grabe su mensaje.
6. Para finalizar la grabación, presione Ok o #.

Nota: Después de grabarlo, usted puede volver a reproducirlo o regrabar el mensaje.

7. Para aceptar su grabación, presione OK o #.
8. Ingrese el número de apartado o número de grupo de apartados.

Nota: Si usted no conoce el número de apartado, presione DIR o # para usar el directorio de la compañía.

9. Después de haber ingresado el número de apartado, la pantalla le muestra el nombre del propietario.
10. Para las opciones de reparto, presione 3.
11. Para marcar el mensaje, presione CERT o 1
URGENT o 2
PRIU o 3
12. Para seleccionar otra opción, presione OPTS o 3
13. Para enviar su mensaje, presione SEND o #.

Usted puede colgar el auricular para enviar su mensaje, cuando hace esto, el mensaje es puesto usando la opción NORMAL.

DESVIO DE LLAMADAS

Cuando usted no está disponible para contestar su teléfono, usted puede desviar sus llamadas directamente al correo de voz. Este contesta sus llamadas y las transfiere dentro de su apartado.

Para desviar sus llamadas usted debe conocer el número de extensión del correo de voz.

Presione Función 985

El número que aparece en su pantalla es la extensión del correo de voz.

Para desviar sus llamadas:

1. Presione Función 4 o Call FWD si está programado.
2. La pantalla muestra Forward to:
3. Ingrese el número de extensión del correo de voz.
Todas las llamadas a su teléfono serán ahora contestadas por el correo de voz y guardadas en su apartado personal.

Cancelación del desvío:

Para cancelar el desvío, use uno de los siguientes métodos;

1. Presione Call Fwd.
2. Presione Función # 4.
3. Presione Cancel

TRANSFERENCIA DE LLAMADAS

Transferencia a un apartado.

Si en algún momento un llamador quiere dejar un mensaje en el correo de voz, usted puede fácilmente transferirle desde su teléfono norstar. Usted puede transferir una llamada a cualquier apartado registrado e inicializado con el correo de voz.

1. Para transferir presione Función 986.

Nota: No presione Hold.

2. Ingrese el número de apartado o use el directorio de la compañía.

Nota: Presione OK o # para aceptar un nombre cuando use el directorio de la compañía. No use la función de automarcación interna.

3. Presione RLS o cuelgue el auricular.

TRANSFERENCIA DE UN PROPIETARIO DE APARTADO AL CORREO DE VOZ.

Usted puede transferir un propietario de apartado a la función de "abrir apartado". Por ejemplo, transferirle a su apartado para cambiar los saludos o retirar mensajes.

Procedimiento:

1. Presione TRANSFER o Función 70.

Nota: La llamada es puesta en espera automáticamente.
No presione Hold.

2. Ingrese el número de extensión del correo meridian.
3. Presione RLS o cuelgue el auricular.

DIRECTORIO DE LA COMPAÑÍA

El directorio de la compañía es una lista de propietarios de apartados que el coordinador del sistema ha habilitado. La membresía en el directorio es establecida por propietarios de apartados cuando ellos inicializan sus apartados. Usted puede encontrar cualquier apartado inicializado, investigando el directorio de la compañía. Usted puede usar el directorio cuando la pantalla del teléfono muestra DIR o cuando un aviso de voz le dice: Presione # para usar el directorio.

Cuando use el directorio, ingrese las primeras cuatro letras del apellido del propietario del apartado, usando la botonera de cualquier teléfono de marcación por tonos. Si usted está usando el directorio desde un teléfono norstar, el nombre del propietario aparece en el display. Para aceptar presione OK o #.

El nombre del propietario es anunciado o aparece en la pantalla. Si el nombre anunciado no lo quiere, presione NEXT o 1 para escuchar el próximo nombre correspondiente.

Nota: Si el apellido de la persona que busca tiene menos de 4 letras, ingrese el apellido completo y presione OK o #.

PARA AHORRAR TIEMPO CON EL CORREO DE VOZ MERIDIAN

- Use las teclas programables en su teléfono norstar para grabar el número de extensión del correo de voz. Esto le permitirá a usted rápidamente y fácil dirigir sus llamadas.
- Si se olvida del número de extensión del correo de voz, presione Función 985 y el número aparecerá en su pantalla.
- Si usted interrumpe el aviso del listado de opciones, presione * para repetir el listado, cuando usa un teléfono norstar de pantalla de una línea o dos líneas, presionando * vuelve la pantalla a la leyenda de aviso previo.
- Para usar el correo de voz desde un teléfono norstar de pantalla de una línea, llame al número de extensión del correo de voz y siga las instrucciones del aviso de voz.
- Para ahorrar tiempo, usted puede interrumpir los avisos, presionando # o seleccionando una opción del correo de voz. No puede interrumpir avisos que le informan de un error cometido.

Cuando usted se encuentre lejos de su oficina use esta cartilla. Esta cartilla muestra todas las opciones que usted puede usar cuando encuentra el correo de voz en operadora automática.

Para escuchar los mensajes del apartado

Abrir el apartado	**
Escuchar sus mensajes nuevos	2
Escuchar sus mensajes guardados	6
Repetir el mensaje	1 1
Repetir y volver 9 segundos	1
Pausa y continuar	2
Avanzar 9 segundos	3
Saltar al final	3 3
Reproducir mensajes previos	4
Dirigir una copia	5
Saltar al próximo mensaje	6
Reproducir información guardada	7
Guardar un mensaje	7 7
Borrar un mensaje	8
Responder un mensaje	9
Controlar el volumen	*

Para grabar un mensaje

- Abrir su apartado	**
- Grabar un mensaje	3
- Finalizar la grabación	#
- Repetir la grabación	1
- Borrar y grabar nuevamente	2
- Aceptar grabación	#
- Regresar a las opciones del correo de voz	*

Cambiar sus opciones de apartado

Abrir su apartado	**
Opciones de apartado	8
Grabar nombre en el directorio	1
Cambiar saludos personales	2
Cambiar su clave	4
Acceso a notificación de mensajes	6
Uso de la operadora automática	#

meridian

**Manual del usuario
y del instalador
para el teléfono
Meridian 8314**

nt northern
telecom

EDWIN SANCHEZ

lista abajo • lista arriba

Siga los pasos sucesivos indicados en la pantalla.

para borrar • para ver más

Corra esta barra y descubra

Opciones.

mantiene al interlocutor en la línea.

termina una llamada o el uso de una lista.

Teclado

se usa con ciertas funciones que le ofrece la compañía telefónica.[†]

muestra los últimos cinco números que usted ha marcado.

marca cualquier número que esté en la pantalla.

activa el altoparlante y el micrófono o solamente el altoparlante.

muestra estado de tecla.

ofrece ocho niveles de contraste.

muestra los datos guardados en la Guía.

guarda en la memoria nombres, números, funciones.

• Para guardar en memoria números, nombres y funciones:

1. Oprima Guardar.
2. Oprima una de las teclas con memoria o la tecla Guía.
3. Siga las instrucciones de la pantalla.

Escriba los nombres, números o funciones guardados en las teclas con memoria en las etiquetas para teclas que se adjuntan.

Teclas con memoria

Uso de la Guía:

- Use $\downarrow$ $\uparrow$ y el teclado para ver la Guía.
- Use **Guardar** para agregar entradas a la lista.
- Use $\leftarrow$ $\rightarrow$ y el teclado para agregar o cambiar números y nombres.
- Para efectuar una llamada, oprima **Marcar** si el nombre o número está en la pantalla.
- Oprima **#** para borrar datos de la Guía.

Uso de la Lista Rediscar:

- Use $\downarrow$ $\uparrow$ para ver datos de la Lista Rediscar.
- Para efectuar una llamada, oprima **Marcar** mientras el número está en la pantalla.

Uso de la Lista de opciones:

- Para mayor información sobre Opciones, consulte el Manual del usuario y del instalador.

[†] Para suscribirse a los Servicios telefónicos personalizados, debe contactar a la compañía telefónica de su localidad.

ntt northern telecom

Superponga esta Plantilla de Instrucciones en su teléfono Meridian 8314

*El teléfono
Meridian 8314
satisface las
necesidades presentes
y futuras de sus
clientes. Ha sido
diseñado para operar
con cualquiera de las
funciones que ofrezca
su compañía
telefónica.*

Contenido

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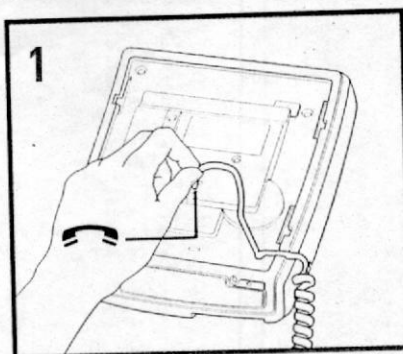
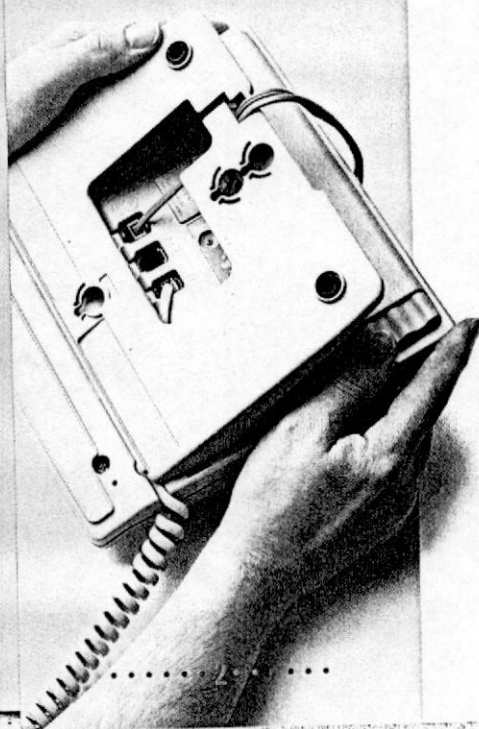
Descripción de las teclas

- Contraste** Le ofrece ocho niveles posibles de iluminación de la pantalla.
- Guía** Le permite guardar y obtener acceso hasta un máximo de 50 nombres y números telefónicos.
- Guardar** Almacena números y nombres en la Guía y en las teclas con memoria.
- ↓ ↑** Le permite desplazarse por cualquier lista tales como Opciones, Guía o Lista Rediscar.
- ← →** Le permite retroceder y borrar algún error hecho al premarcar, al agregar o cambiar números y nombres en la Guía o en las teclas con memoria.
- Agrega un espacio al entrar nombres en la Guía o en las teclas con memoria. Permite ver los mensajes de estado en la pantalla.
- []** La tecla sin nombre Opciones, oculta bajo la barra corrediza, le permite el acceso a cinco opciones para personalizar su teléfono.
- Retener** Pone la llamada en retención.
- Desc** Siempre cuelga una llamada. Le permite salir de listas tales como Guía, Opciones o Lista Rediscar.
- Enlace** También se la denomina "Flash". Permite el acceso a funciones de la red, tales como Llamada en espera.
- Rediscar** Le permite el acceso a la lista de los últimos cinco números marcados.
- Marcar** Selecciona su línea y marca cualquier número en pantalla. Si no se levanta el auricular, pasa a Manos libres.
- Manos libres** Activa el altavoz y el micrófono de modo que pueda hablar y escuchar sin levantar el auricular.
- #** Le permite borrar entradas de la Guía y de las teclas con memoria.
- ◀ ▶** Le permite ajustar el volumen del auricular, del micrófono y del timbre.
- []** La teclas con memoria almacenan números, nombres y funciones.

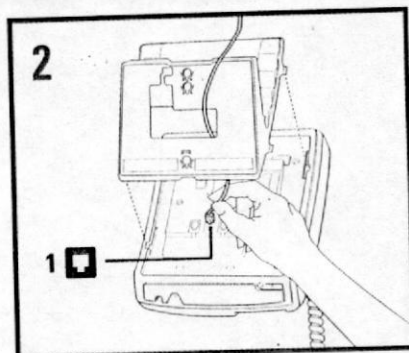


Instalación

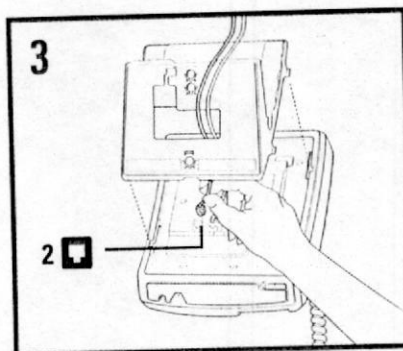
Asegúrese de que los
cordones estén
debidamente
encaminados a través
de las ranuras del
soporte.



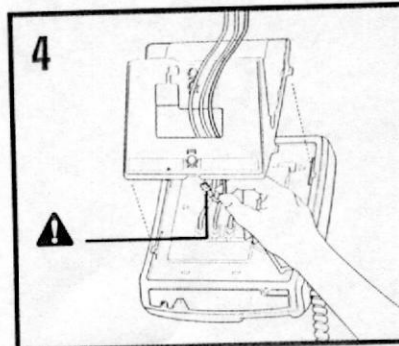
Conecte el cordón del auricular .



Conecte el cable de línea en el enchufe N° 1 como se muestra en 1 .

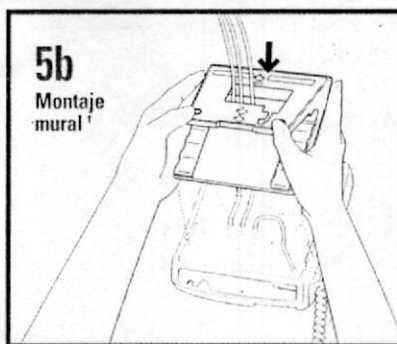
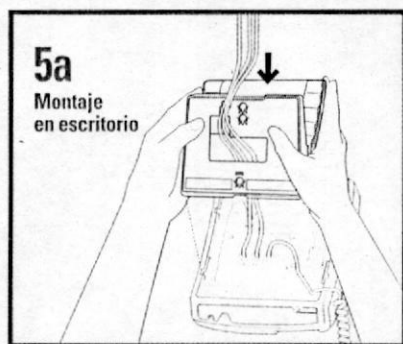


Si tiene una máquina facsímil, un módem o un contestador automático, conecte el cable de línea en el enchufe N° 2, como se muestra en 2 .

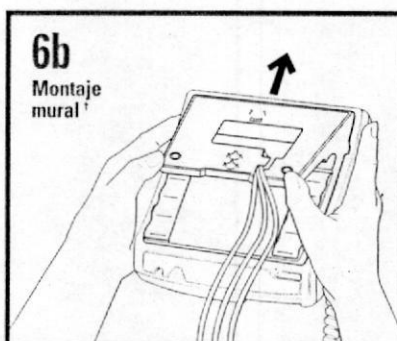


Conecte el cable del adaptador de corriente .

† El cable para facsímil, módem o contestador automático no viene con el teléfono.



Encaje el soporte en las ranuras de la base del teléfono, como se muestra en las ilustraciones de montaje en escritorio o mural que aparecen arriba.



Deslice el soporte hacia atrás hasta que enganche bien, como aparece en las ilustraciones de montaje mural o en escritorio que se muestran arriba.

Prueba del teléfono

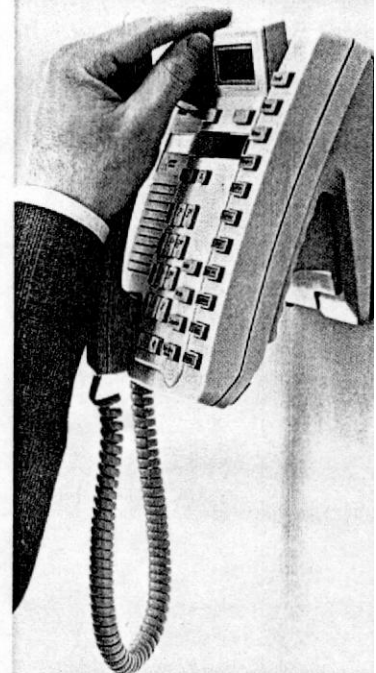
Su teléfono efectúa una prueba para verificar que el cable de línea está bien conectado. Si no lo está, el mensaje de la pantalla le indica que examine la conexión. Asegúrese de que las conexiones estén debidamente hechas.

Nota: El Factor de Carga (FC) es 14 y el Número de Equivalencia del Timbre (NET) correspondiente al teléfono Meridian 8314 es 1.4B.

Si desea obtener información adicional sobre regulaciones y seguridad, consulte la página sobre Regulaciones o las instrucciones en la base de su teléfono.

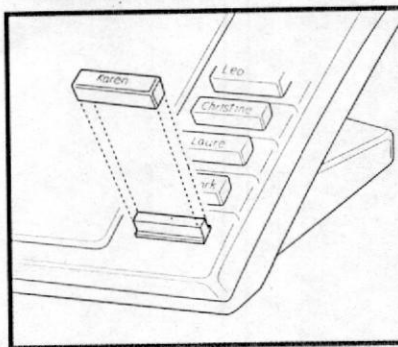
† Le recomendamos que utilice una placa de montaje mural, que puede ser instalada por la compañía de teléfonos local.

Tenga presente ajustar la pantalla después de haber instalado el teléfono sobre el escritorio o en la pared.

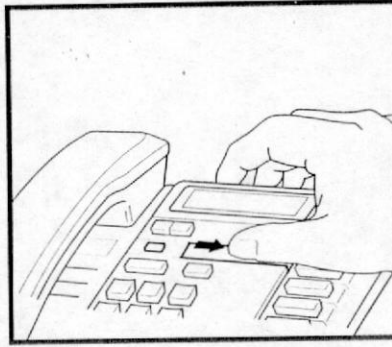


*El teléfono
Meridian 8314
se adapta a sus
necesidades.*

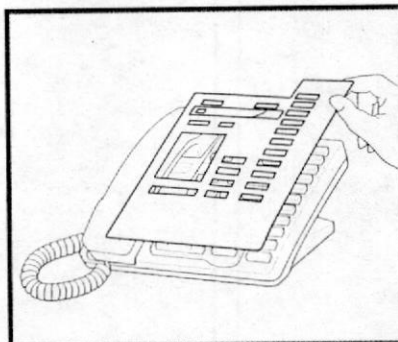
Preparación del teléfono



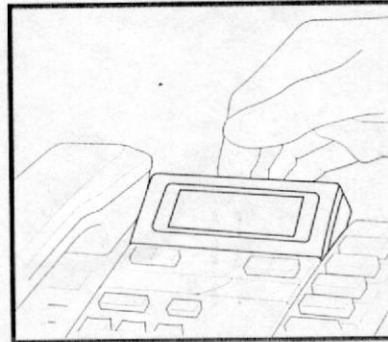
Una vez programadas las teclas con memoria (Véase Teclas con memoria), identifíquelas con las etiquetas en blanco y las cubiertas de teclas que se adjuntan.[†]



Deslice la barra hacia la derecha para ver la tecla Opciones.[†]



Superponga la Plantilla de Instrucciones en las teclas del teléfono.



Coloque su teléfono Meridian 8314 sobre una mesa o cuélguelo en una pared y luego ajuste la pantalla.

Selección del idioma

Al enchufar por primera vez su Meridian 8314 el mensaje le indica que seleccione el idioma. Si desea español, siga las instrucciones y cambie las cubiertas de tecla.

Cubiertas de las teclas en español

Contrast = Contraste	Directory = Guía	Hold = Retener
RLs = Desc	Redial = Rediscar	Link = Enlace
Dial = Marcar	Save = Guardar	Handsfree/Mute = Manos libres/Privado

[†] No permita que los niños jueguen ni con las cubiertas de las teclas ni con la barra ya que pueden soltarse si el teléfono se cae.

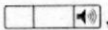
Cambio del idioma de los mensajes

Si lo desea, usted puede adecuar el teléfono a sus necesidades comerciales cambiando el lenguaje en que aparecen los mensajes en la pantalla. Oprima la tecla oculta Opciones y siga las instrucciones de la pantalla. (Consulte los procedimientos a seguir para Opciones en la página 16.)

Programación de la hora y la fecha

La hora y la fecha se programan manualmente. En los casos de corte de corriente, cambio de horario de verano y años bisiestos tendrá que reprogramarlas. Oprima la tecla oculta Opciones y siga las instrucciones de la pantalla. (Véase Opciones en la página 16.)

Timbre audible o inaudible

Usted puede desactivar el timbre oprimiendo y reteniendo el lado izquierdo de la barra de volumen sin levantar el auricular. En la pantalla aparece el mensaje **Sin volumen**. Para volverlo a activar, oprima el lado derecho de la barra de volumen , sin levantar el auricular.

Programación del tono y volumen del timbre

Usted puede elegir entre cuatro tonos de timbre diferentes y puede adecuar el volumen a su gusto. Asegúrese de que el timbre no esté desactivado y luego oprima la tecla oculta Opciones y siga las instrucciones de la pantalla. (Véase Opciones en la página 16.) Al elegir el tono de timbre, oprima la barra de volumen  que se encuentra más abajo del teclado, para graduar el volumen. Utilice **Guardar** al finalizar cuando esté satisfecho con el tono y el volumen del timbre.

Control del volumen del timbre cuando el teléfono esté sonando

Cuando el teléfono esté sonando, usted puede oprimir el lado izquierdo o derecho de la barra de volumen, ya sea para bajar o subir respectivamente el volumen del timbre .

Control del volumen del auricular

En el curso de una llamada usted puede oprimir el lado izquierdo o derecho de la barra de volumen  para bajar o subir respectivamente el volumen.

Control del volumen del altoparlante

Mientras escucha por el altoparlante usted puede oprimir el lado izquierdo o derecho de la barra de volumen  para bajar o subir respectivamente el volumen.

*Usted puede graduar
el volumen del
teléfono a su gusto.*



*El teléfono
Meridian 8314
le ahorra un tiempo
precioso.*

Funciones básicas

Una vez preparado el teléfono, usted está listo para utilizar las funciones que simplificarán sus transacciones comerciales cotidianas.

Llamadas

El teléfono Meridian 8314 viene con el Teclado activo apagado, lo que significa que usted puede efectuar llamadas corrientes, premarcar un número (verifíquelo antes de efectuar la llamada), o marcar un número almacenado en la Lista Rediscar, en una tecla con memoria o en la Guía. Para las instrucciones respectivas consulte las secciones sobre la Lista Rediscar, Teclas con memoria o la Guía.

Llamada corriente:

1. Levante el auricular.
2. Entre el número utilizando el teclado.

Llamada premarcada:

1. Entre el número usando el teclado.
2. Oprima **Marcar** o levante el auricular.

Usted puede activar el teclado para que el teléfono marque automáticamente en la función Manos libres al oprimir una tecla del teclado o una tecla con memoria (Véase la página siguiente sobre Manos libres). Oprima la tecla oculta Opciones y siga las instrucciones de la pantalla. (Consulte los procedimientos para Opciones en la página 16.)

Medición del tiempo de una llamada

Usted puede programar una tecla con memoria para medir la duración de una llamada. El cronómetro toma automáticamente el tiempo desde el comienzo al final de la llamada. Para programar el cronómetro, oprima la tecla oculta Opciones y siga las instrucciones de la pantalla. (Consulte los procedimientos para Opciones en la página 16.)

Cronómetro en la pantalla:

1. Efectúe o reciba una llamada. El cronómetro se activa automáticamente.
2. Cuando la llamada está en curso, oprima la tecla con memoria en la cual ha programado el cronómetro. La pantalla muestra el tiempo en transcurso de la llamada.
3. Para que la pantalla vuelva a mostrar los datos de llamadas, oprima nuevamente la tecla Cronómetro.
4. Al terminar la llamada, cuelgue el auricular u oprima **Desc**. El cronómetro deja de contar.

Nota: Si no hay una llamada en curso, al oprimir la tecla cronómetro, la pantalla mostrará el tiempo que tomó la última llamada.

Retención de llamadas

Para activar y desactivar Retención de llamadas:

1. Efectúe o responda una llamada.
2. Oprima **Retener**. La pantalla muestra la llamada en retención.
3. Oprima **Retener**, **Manos libres Privado**, o levante el auricular para dar curso a la llamada.

Nota: Después de 15 minutos, la llamada en retención se pierde.

Llamada con la función Manos libres

Le permite marcar sin levantar el auricular o efectuar una llamada del modo usual y luego hablar sin usar el auricular.

Marcado sin levantar el auricular:

1. Oprima **Manos libres Privado**.
2. Entre el número usando el teclado.

Cambio a Manos libres:

1. Levante el auricular.
2. Entre el número usando el teclado.
3. Cuando la persona llamada responda, oprima **Manos libres Privado**.
4. Cuelgue el auricular.

Llamada en privado

En una llamada Manos libres, si no desea que su interlocutor escuche, usted puede desactivar el micrófono. Esto no impide que usted escuche a su interlocutor.

Para hablar en privado:

1. Oprima **Manos libres Privado**.
2. Sin levantar el auricular efectúe la llamada.
3. Vuelva a oprimir **Manos libres Privado** para desactivar el micrófono. La luz intermitente junto a **Manos libres Privado** le indica que ahora usted puede hablar sin que su interlocutor escuche mientras usted continúa oyéndolo.
4. Vuelva a oprimir **Manos libres Privado** para hablar con su interlocutor. Cada vez que usted oprime **Manos libres Privado**, se pasa de Manos libres a Privado y viceversa.
5. Oprima **Desc** al terminar la llamada.

Utilización de la Lista Rediscar

Si no se acuerda de un número que acaba de marcar, lo encontrará en la Lista Rediscar, que contiene los últimos cinco números que usted ha marcado.

Llamada desde la Lista Rediscar:

1. Oprima **Rediscar**. La pantalla muestra el último número marcado.
2. Busque el número al que desea llamar oprimiendo **↓** o **↑**.
3. Cuando el número esté en pantalla oprima **Manos libres Privado**, **Marcar** o levante el auricular.

*La función
Manos libres le
permite hablar por
teléfono sin tener que
levantar el auricular.*

*Usted puede obtener
acceso a las funciones
de la red telefónica
con sólo tocar una
tecla.*

Teclas con memoria

Almacenamiento de funciones en teclas con memoria

Usted puede almacenar los códigos de funciones de los servicios de la compañía telefónica en las teclas con memoria, lo que le facilita el acceso, especialmente con funciones tales como Desvío de llamadas, Selector de datos de llamada y Devolución de llamadas. Algunas funciones requieren códigos de activación y desactivación en dos teclas separadas, mientras que otras se almacenan en una sola tecla. El procedimiento que sigue a continuación le indicará cómo almacenar un código de activación y uno de desactivación.

Para guardar código de función activada:

1. Oprima **Guardar**.
2. Oprima la tecla con memoria deseada.
3. Marque el código de función de la compañía telefónica para activar la función.*
Lea la pantalla para confirmar el número.
4. Oprima nuevamente **Guardar**.
5. Entre el nombre de la función usando el teclado. (Consulte el cuadro de letras de la página 8.)
6. Oprima nuevamente **Guardar**.
7. Identifique la tecla con memoria con una etiqueta (véase la hoja de etiquetas para instrucciones.)

Para guardar código de función desactivada:

1. Oprima **Guardar**.
2. Oprima la tecla con memoria deseada.
3. Marque el código de función de la compañía telefónica para desactivar la función.*
Lea la pantalla para confirmar el número.
4. Oprima nuevamente **Guardar**.
5. Entre el nombre de la función usando el teclado. (Consulte el cuadro de letras de la página 8.)
6. Oprima nuevamente **Guardar**.
7. Identifique la tecla con memoria con una etiqueta (Véase la hoja de etiquetas para instrucciones.)

* **Nota:** Contacte a su compañía telefónica para obtener los códigos de función apropiados.

Utilización de teclas con función

Cuando se programa un código de función en una tecla con memoria, es necesario marcar el código para activar o desactivar la función.

Activación o desactivación de una función:

1. Oprima la tecla con memoria que contiene la función deseada.
La pantalla mostrará el nombre y código de la función.
2. Oprima **Atender** o **Marcar**, o levante el auricular.
El código de la función se ha marcado, activando o desactivando la función.

Almacenamiento de una función y luz en teclas con memoria

Al activar una función, usted puede hacer que simultáneamente se encienda la luz y que se apague al desactivarla. Sólo es posible hacer esto con una función. Esto funciona bien con cualquier servicio que tenga códigos separados de activación y desactivación, como Desvío de Llamadas. Por ejemplo, si desea que la luz le recuerde que Desvío de Llamadas está activada, use una tecla con memoria para que la luz se encienda al activar la función. Utilice la segunda tecla con memoria para apagar la luz al desactivar la función. El procedimiento que sigue a continuación le indica cómo programar una tecla con una función con luz o sin luz.

Para guardar una tecla de función con luz:

1. Oprima **Guardar**.
2. No seleccione todavía una tecla con memoria. Oprima **7** para programar luz encendida.
3. Oprima la tecla con memoria deseada.
4. Marque el código de la función de la compañía telefónica para activar la función.*
- Lea la pantalla para confirmar el número.
5. Oprima nuevamente **Guardar**.
6. Identifique la tecla con memoria (véase la hoja de etiquetas para instrucciones).

Para guardar una tecla de función sin luz:

1. Oprima **Guardar**.
2. No seleccione todavía una tecla con memoria. Oprima **0** para programar luz apagada.
3. Oprima la tecla con memoria deseada.
4. Marque el código de la función de la compañía telefónica para desactivar la función.*
- Lea la pantalla para confirmar el número.
5. Oprima nuevamente **Guardar**.
6. Identifique la tecla con memoria (véase la hoja de etiquetas para instrucciones).

* **Nota:** Contacte a su compañía telefónica para obtener los códigos de función apropiados.

Utilización de teclas de función con luz

Activación o desactivación de una función y de la luz:

1. Oprima la tecla con memoria en la que almacenó la función con luz. La pantalla mostrará por algunos segundos **Función con luz** o **Función sin luz**.
2. Oprima **Mayús** **Privado**, **Marcar**, o levante el auricular. La función y la luz se activan o desactivan. (Incluso si usted no está utilizando el teléfono, la pantalla le mostrará **Activa**, para recordarle que la función y la luz se encuentran activadas.

*Usted puede
programar la luz para
recordarle que hay
una función activada.*



*La pantalla
del teléfono
Meridian 8314 lo guía
paso a paso.*

Mensajes de la pantalla

Mensajes generales de la pantalla

Mensaje	Significado
...xxxxxxxxxxxxxxxx	El número es más largo que la pantalla. La pantalla muestra ... y los últimos 15 dígitos del número.
Acceso bloqueado	La tecla con memoria viene ya programada y no se puede borrar o volver a programar. Programe otra tecla con memoria.
Activa	La función con luz se ha activado y se ha marcado el código correspondiente. Para desactivar la función y la luz oprima la tecla de función sin luz y oprima Menos Libres Proceso , Marcar o levante el auricular. (Véase página 11.)
Guía saturada Sin modificación	La Guía acepta un máximo de 50 entradas. Si desea agregar otras entradas debe borrar las absoletas.
Guía vacía Use Guardar	La Guía permanece vacía hasta que usted entre los números y nombres que desea.
Lista Rediscar vacía	Mensaje que aparece si usted oprime Rediscar antes de hacer una llamada o si ha habido un corte de corriente.
Mal enchufado	Si no hubiera tono de marcar, asegúrese de que el cable de la línea y el cordón del auricular estén debidamente conectados.
Msje en espera	Su servicio de mensajes por voz ha recibido una llamada para usted. (Contacte a su compañía telefónica para suscribirse al servicio de mensajes por voz.)
Sin volumen	El volumen del timbre está desactivado. Para activarlo sin levantar el auricular, oprima el lado derecho de la barra de volumen. Si está en la Lista Opciones, oprima Desc para salir antes de activar el timbre.
Teléfono en uso	Hay un teléfono ocupando la línea, o alguien está tratando de usar la misma línea o extensión telefónica. Espere que el mensaje desaparezca para efectuar su llamada.

Mensajes de pantalla y luz

Mensajes en el servicio de mensajes por voz

La luz de su teléfono Meridian 8314 le indica que hay un mensaje para usted en su servicio de mensajes por voz. Luego de haber recibido el mensaje, la luz permanece encendida y la pantalla muestra **Msje en espera**. Para suscribirse a los servicios de Mensaje en espera contacte a su compañía telefónica.

Sobre las luces

La luz del teléfono Meridian 8314 también le avisa si hay otro teléfono ocupando la línea, suena el timbre del teléfono, hay una llamada en Retención, una función activada o el timbre está desactivado. Una pequeña luz roja al lado de la tecla

 le indica el estado de Manos libres y Privado.

Mensajes con luz

Función	Luz
La llamada está en retención	La luz titila rápidamente.
Línea en uso	La luz está encendida.
Función activada	La luz está encendida.
Mensaje en espera	La luz titila lentamente.
Timbre inaudible	La luz está apagada.
Timbre visual	La luz titila muy rápidamente.

Mensajes con luz para Manos libres

Función	Luz
La llamada está en Manos libres	La luz de Manos libres/privado está encendida.
Micrófono desactivado	La luz de Manos libres/privado titila lentamente.

Mensajes múltiples de pantalla y luz

Si no está usando el teléfono, hay hasta cuatro mensajes que pueden activarse en un momento dado: hora y fecha, Activa, Msje en espera y Sin volumen. En caso de que más de uno de estos mensajes esté activo, la pantalla muestra el más reciente y **→** en la esquina inferior derecha. Para ver los restantes, oprima . Cada vez que usted oprime , la pantalla muestra el próximo mensaje activo y la luz correspondiente. Usted puede decidir cuál de estos mensajes deja en la pantalla.

*La luz del
Meridian 8314 le
permite enterarse de
lo que sucede en su
teléfono aunque se
encuentre al otro
extremo de la sala.*

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Envío del certificado de Garantía y Reparaciones

Al enviar su teléfono Meridian 8314 al centro de
 servicio Northern Telecom indicado a
 continuación, usted se responsabiliza por los gastos
 del envío.

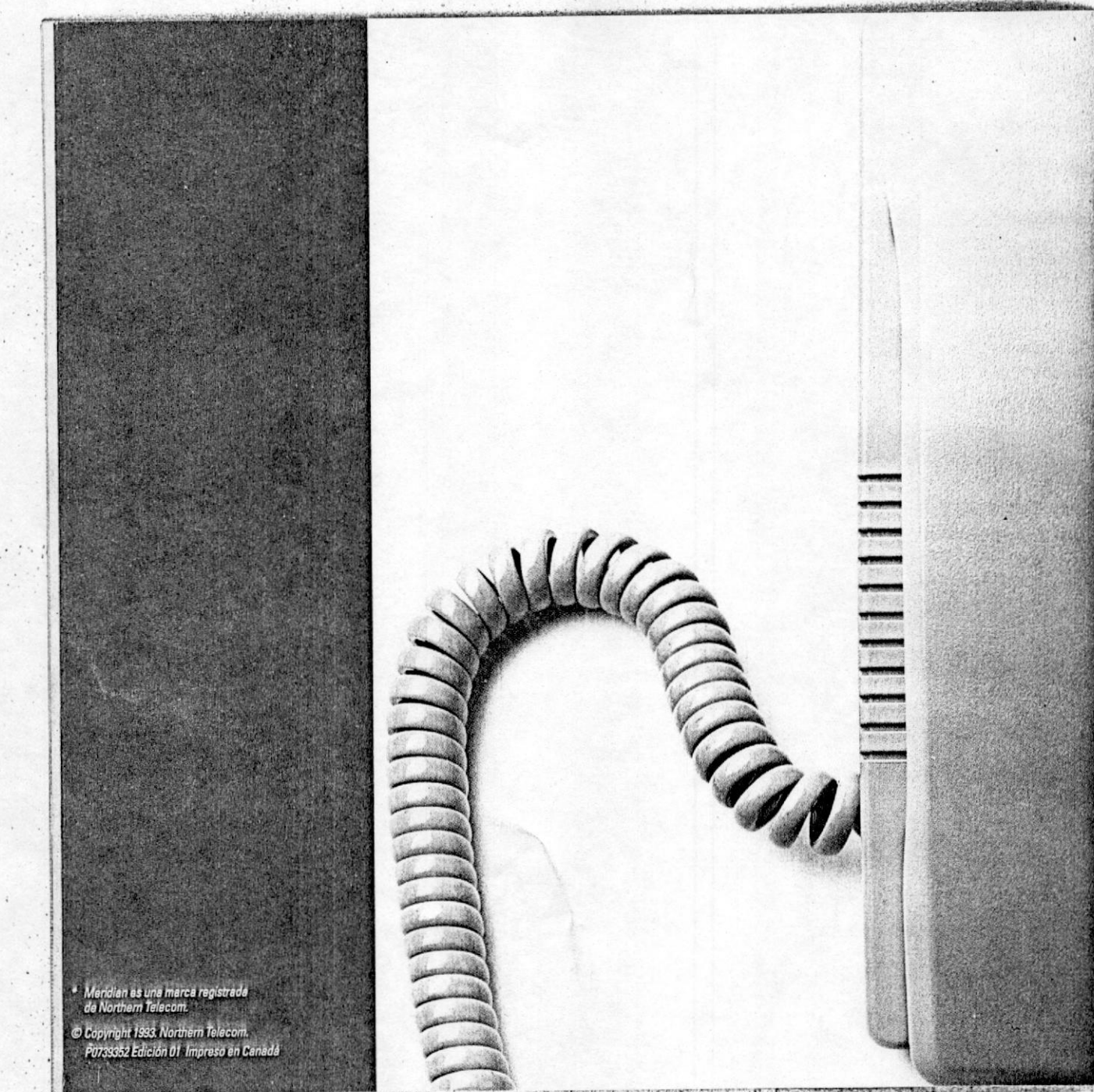
En EE.UU., envíelo a:

Northern Telecom Inc.
 Product Service Center
 640 Massman Drive
 Nashville, Tennessee 31210

Información general

Si después de haber leído este manual necesitara
 más información, llame al 1-800-NORTHERN
 en los Estados Unidos.

Para otras regiones, contáctese con la compañía
 telefónica local.

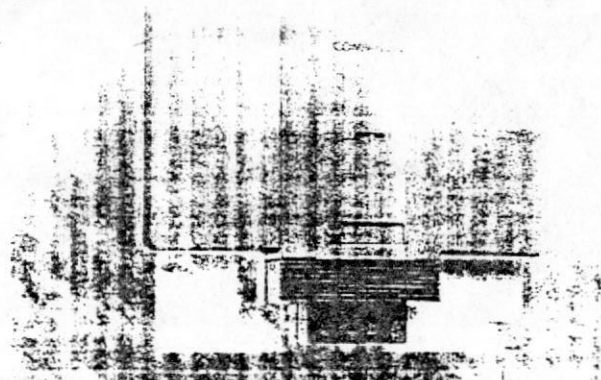


* Meridian es una marca registrada
de Northern Telecom.

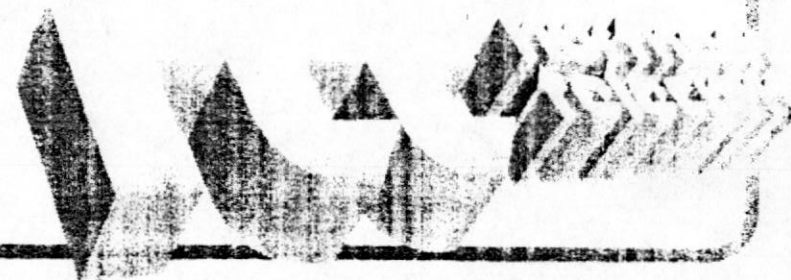
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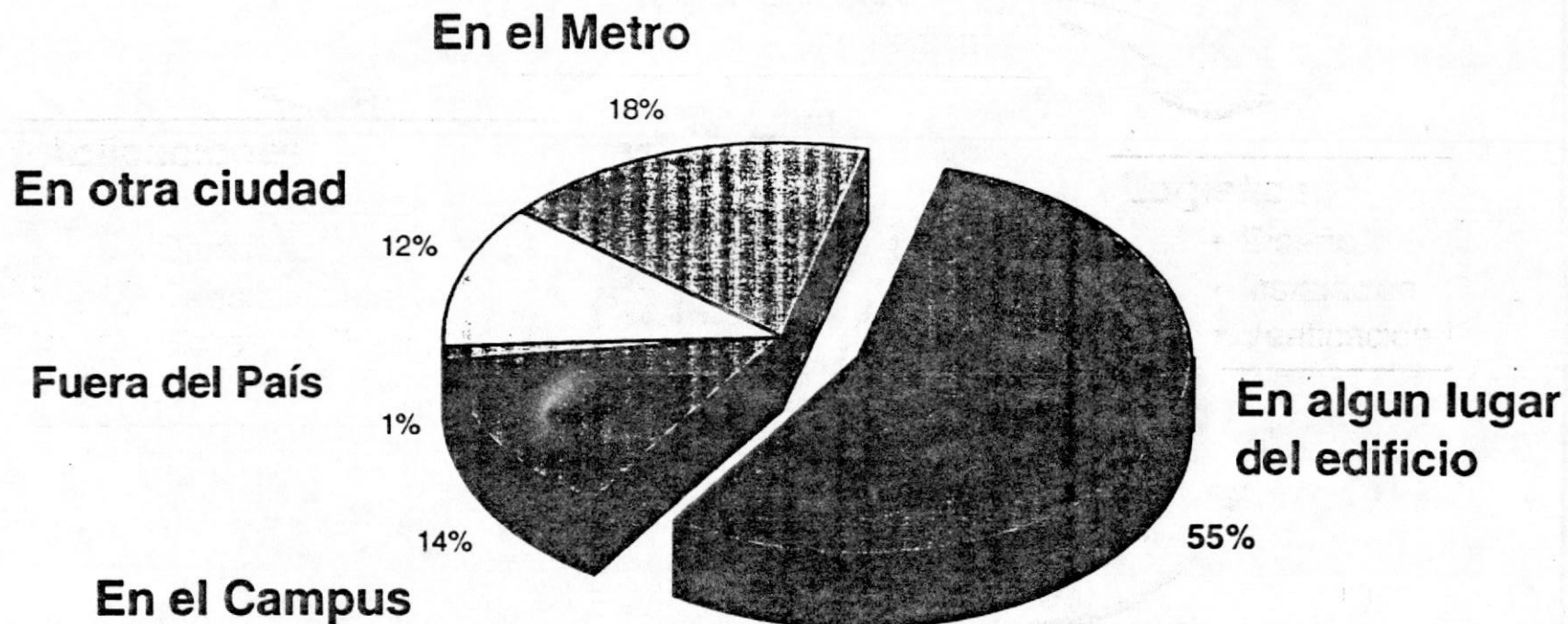
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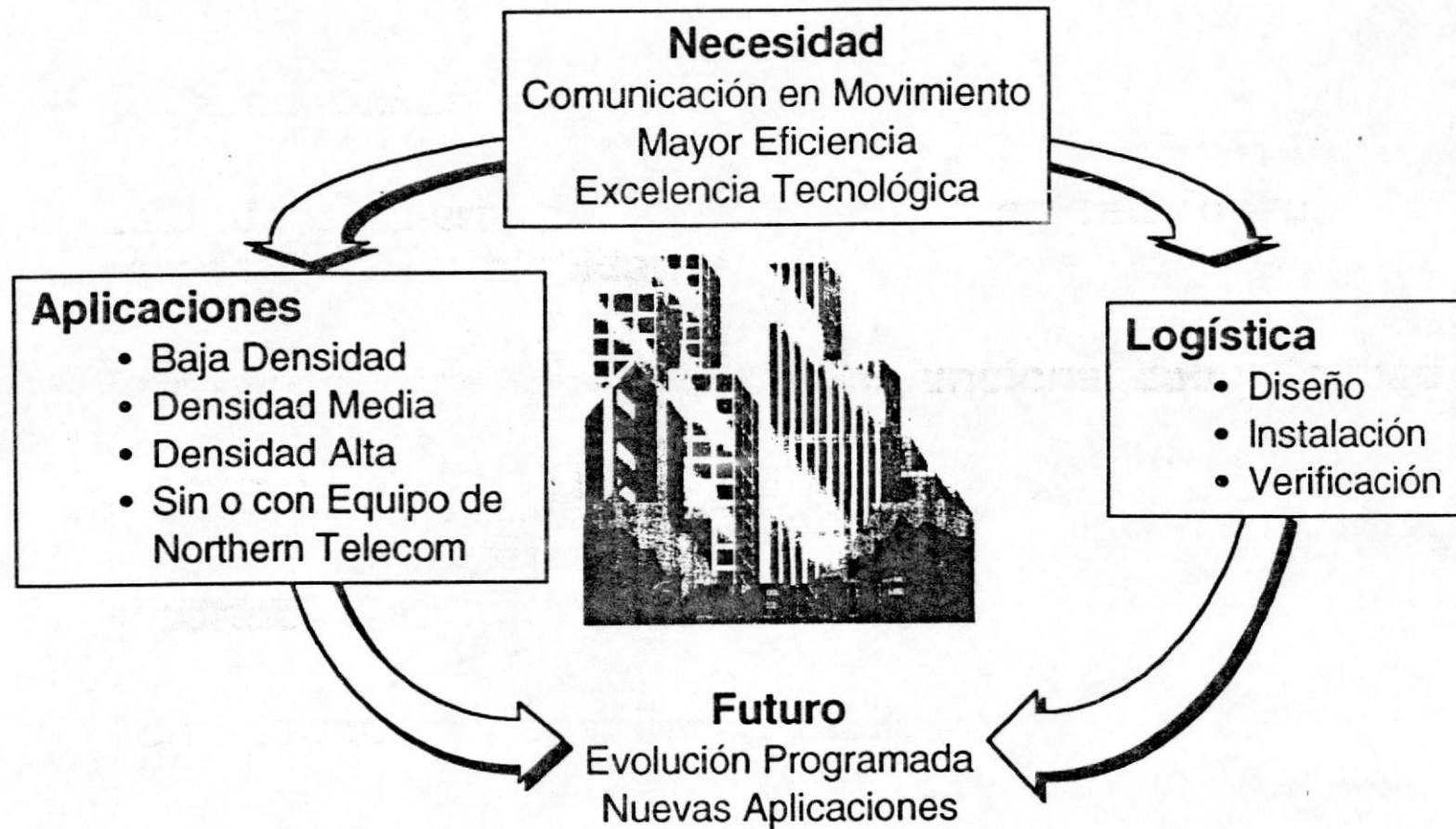
Companion, el producto y su futuro



¿ Donde están los empleados cuando suena el teléfono?



Fuente: BIS Strategic Decisions





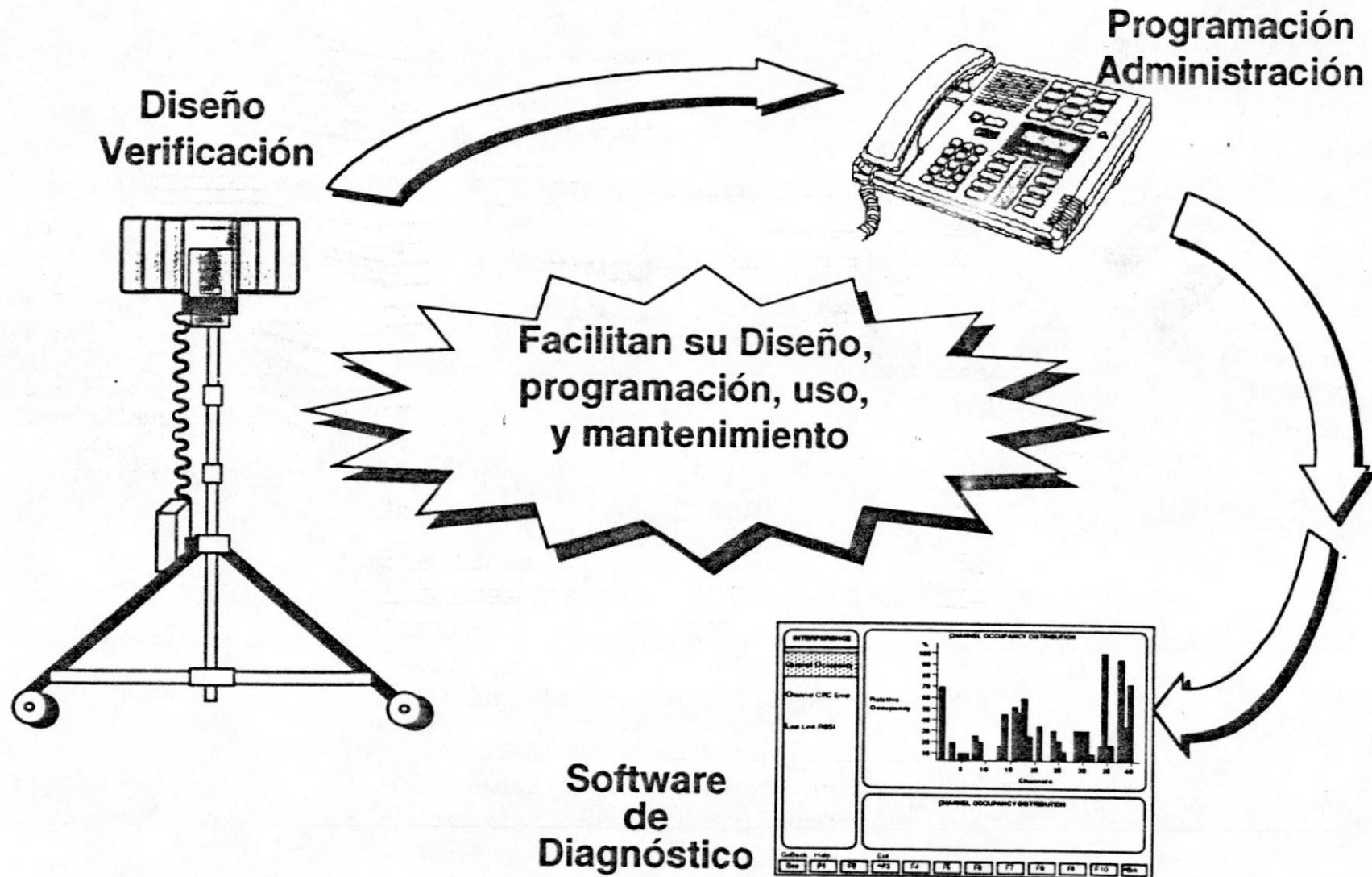
- **Reglamentación y Espectro**
 - **Estandar Abierto para coexistencia, compatibilidad, competencia y ubicuidad**
 - **Tecnología para Alto rendimiento: funcionalidad y Calidad**
 - radio enlace
 - autenticación y privacidad
 - funciones del sistema
 - portabilidad
 - **Administración y Despliegue Fácil**
 - **Fácil de Adquirir**
-

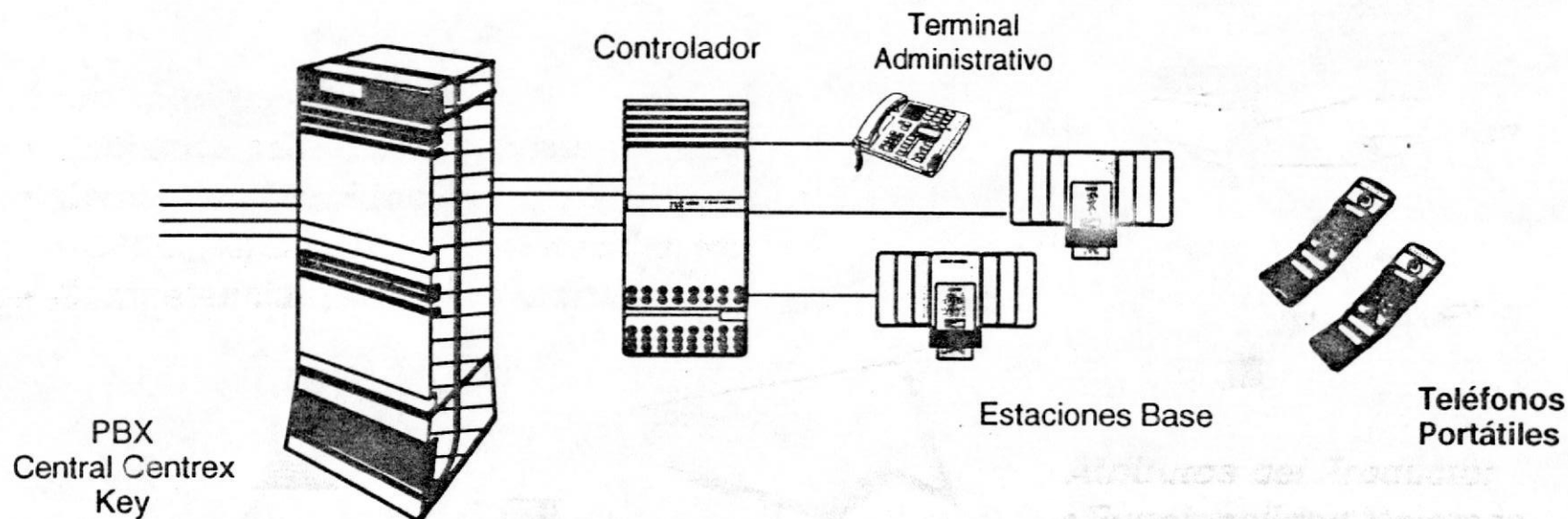


Servicios de Comunicaciones Personales (PCS) Definición



Comunicación con cualquier persona, a cualquier tiempo, en cualquier lugar, sobre cualquier medio...





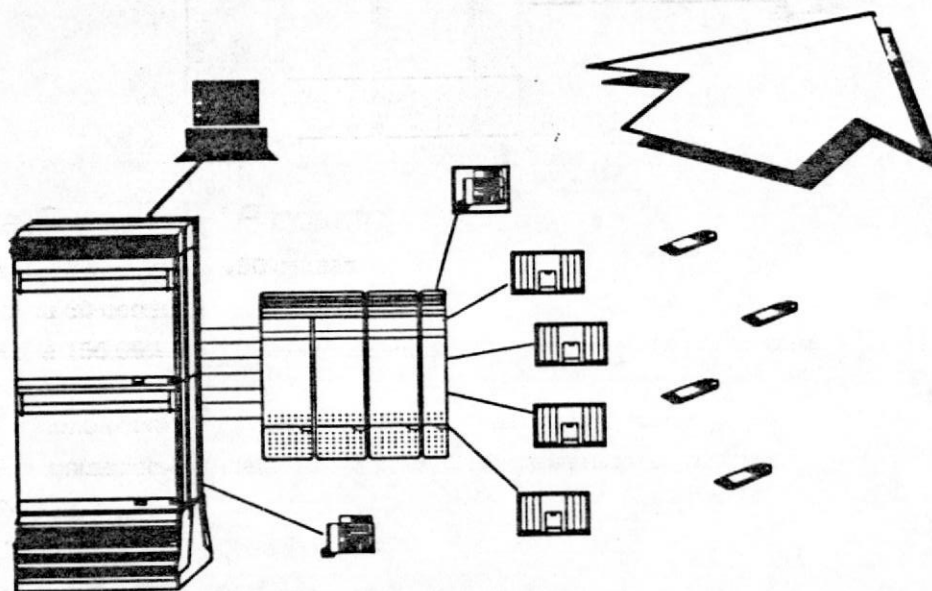
Descripción	C100A	C200A
Extensiones	80	152
Estaciones Bases	128	224
Portátiles	80	152
Celdas	48	96
Cobertura (mts ²)	100,000	480,000

- Sincronización total para mayor capacidad
- Capacidad total de "roaming y handoff"
- Capacidad para diagnóstico remoto
- Acceso a facilidades del PBX o sistema Centrex



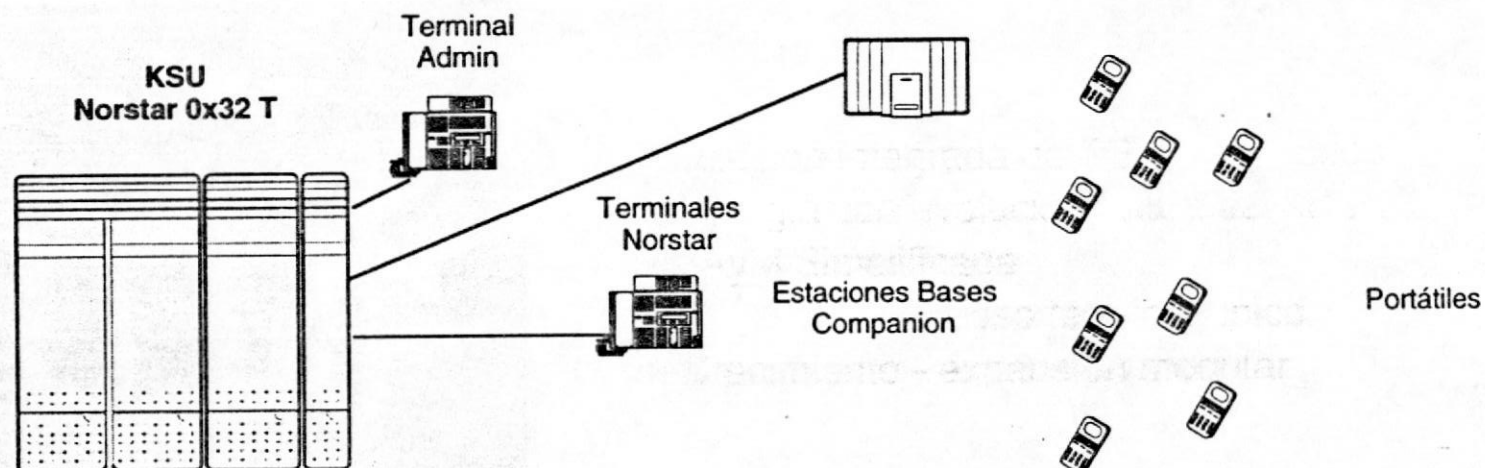
Impulsadores del Mercado:

- Demanda para Sistemas más Grandes
- Demanda para Funcionalidad Mejorada
 - CPND, Mensaje en Espera, Privacidad, etc.
- Competencia (Precio/Funcionalidad)



Atributos del Producto:

- **Funcionalidad Mejorada**
 - Integración Inteligente
 - Capacidad Meridian 1
- **Capacidad Mejorada**
 - cobertura, usuarios
- **Mejoras en Costos**
 - Costos del Producto
 - Costos de Instalación
- **OAYM Simplificada**

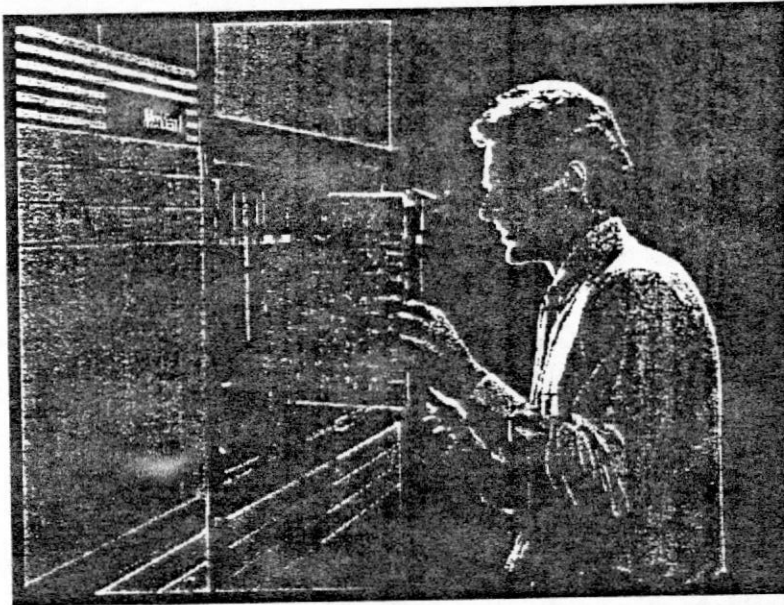


Vista General del Producto

- Hasta 48 estaciones/30 celulas
- Hasta 50 portátiles
- Hasta 150,000 m² (1.2 M ft²) dependiendo la cobertura en el tipo de construcción del edificio
- Funciones completas de los teléfonos Norstar de escritorio
- Sincronización completa del sistema para incrementar su capacidad
- Registro del Usuario
- Capacidad Completa de Roaming
- Handoff
 - Movilidad
 - Interferencia

Funciones Principales de los Portátiles

- Transferencia
- Conferencia
- Desvío
- CLASS/CMS
- Parqueo de Llamadas
- Marcación Abreviada
- Llamada en Espera
- Señalización de Punto-a-Punto
- Contestación de Llamadas desde cualquier terminal
- Selección Automática de Línea



Meridian 1 Opción 11 a 81

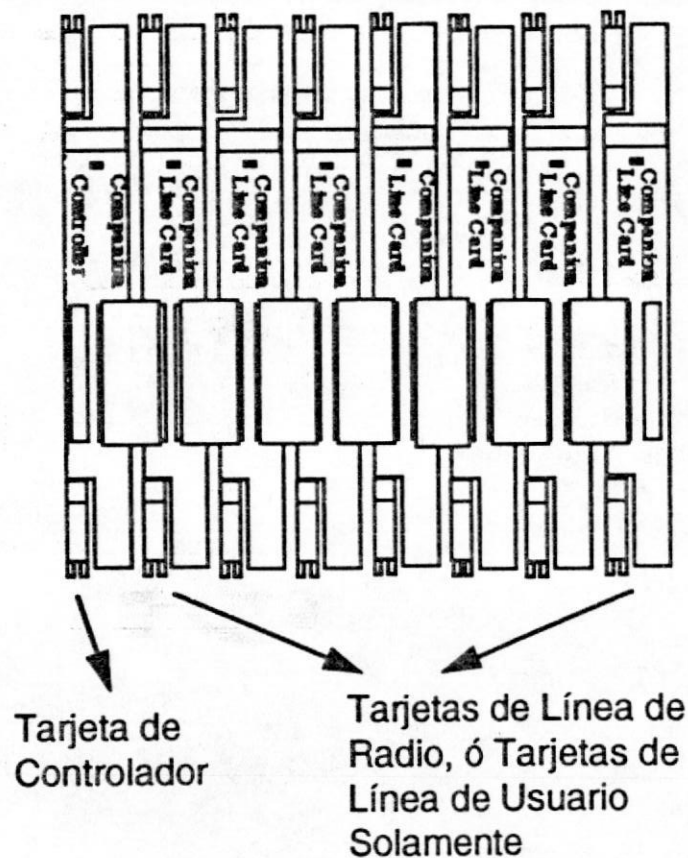
- Solución integrada de PBX inalámbrico
- Sinergia con evolución futura del M1
- OAyM Simplificada
 - Acceso terminal unico
- Crecimiento - expansión modular

Requisitos del Producto

- M1 Opción 11 a 81
- Sistemas SL-1T actualizados con IPE
- X11 Release 15 y mayor
- Repisa IPE Standard
- Tarjeta de Controlador de Movilidad
- Tarjeta de Línea de Radio
- Tarjeta de Línea de Usuario



Subsistema Inteligente de Movilidad



Atributos Producto

- Funcionalidad Mejorada
 - CLID (R20)
 - CPND (R20)
 - Privacidad (R20)
 - Indicador Visual de Llamada en espera (R15)
- Capacidad Mejorada
 - Hasta 240 teléfonos portátiles
 - Hasta 128 estaciones base
 - Hasta 48 células
 - Hasta 134,000 mt².



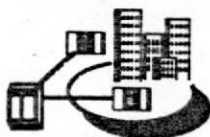
- Extender la Movilidad del Usuario
- Expandir la Capacidad del Sistema
- Centralizar la Administración
- Proveer Funciones Mejoradas - Equivalente al de escritorio
- Apoyar Multi-Media - Datos, Video

Evolución de la Red

1993/1994

Nodo Unico

- Un solo Lugar



- hasta 200 usuarios

1994/1996

Servicio de Red

- Roaming Campus/Multi-lugares
- Diseñado con cualquier PBX/CTX
- OAyM Centralizado
- Movilidad Completa (Handover en zona)

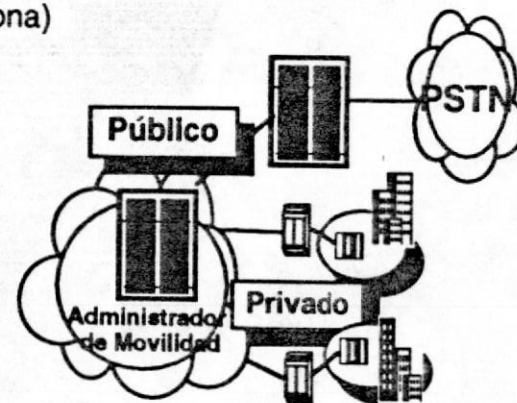


- 300 + usuarios

1996+

Servicios Avanzados de Red

- Roaming Privado a Público
- Completo en Funciones
- Multi-Media - Video





COMPANION

Meridian1
Communication Systems

Product Bulletin

Number: CALA-040-PB

Date: January, 1996

**NORSTAR COMPANION WIRELESS
BUSINESS COMMUNICATIONS SYSTEM**

Description: **NEW PRODUCT ANNOUNCEMENT - NORSTAR COMPANION**

NORTEL is pleased to announce the market availability of **Norstar COMPANION**, the fully integrated COMPANION application on Norstar. Norstar COMPANION is a member of the Companion* and Norstar* family of products providing mobility in the workplace.

Norstar COMPANION will be generally available after the first quarter in CALA countries that support the CT2Plus protocol. Norstar COMPANION FCC Etiquette compatible systems operating at 1.9 GHz will be announced in the near future. Norstar COMPANION will further expand the COMPANION product portfolio that provides integrated wireless communication options for small and large businesses. Norstar COMPANION is a fully integrated application on Norstar and is supported on the Norstar-PLUS Modular ICS hardware platform.

The Norstar COMPANION system utilizes the same portable telephone sets (C3020) and Base Stations as COMPANION 200 and Meridian COMPANION products.

This document includes a description of the COMPANION application on Norstar, a system overview, COMPANION product descriptions, radio and base station deployment concepts, and product ordering information.

In addition, a series of look up tables (Appendix A) have been provided to assist in determining the number of base stations required to provide radio coverage for a given customer location.

NORTEL

A World of Networks

* COMPANION and Meridian are registered trademarks of
© Northern Telecom, 1995

System Overview:

Norstar COMPANION is a fully integrated application on Norstar and is supported on the Norstar-PLUS Modular ICS hardware platform. The basic elements of a Norstar COMPANION system are:

- Norstar-PLUS Modular ICS (0x32) system
- Software feature cartridge (MICS-ICS-XC 1.0) providing both wireless and expanded Norstar wireline capabilities
- COMPANION C3020 portable telephones
- COMPANION Base Stations to provide radio coverage and capacity
- System Administration Tools

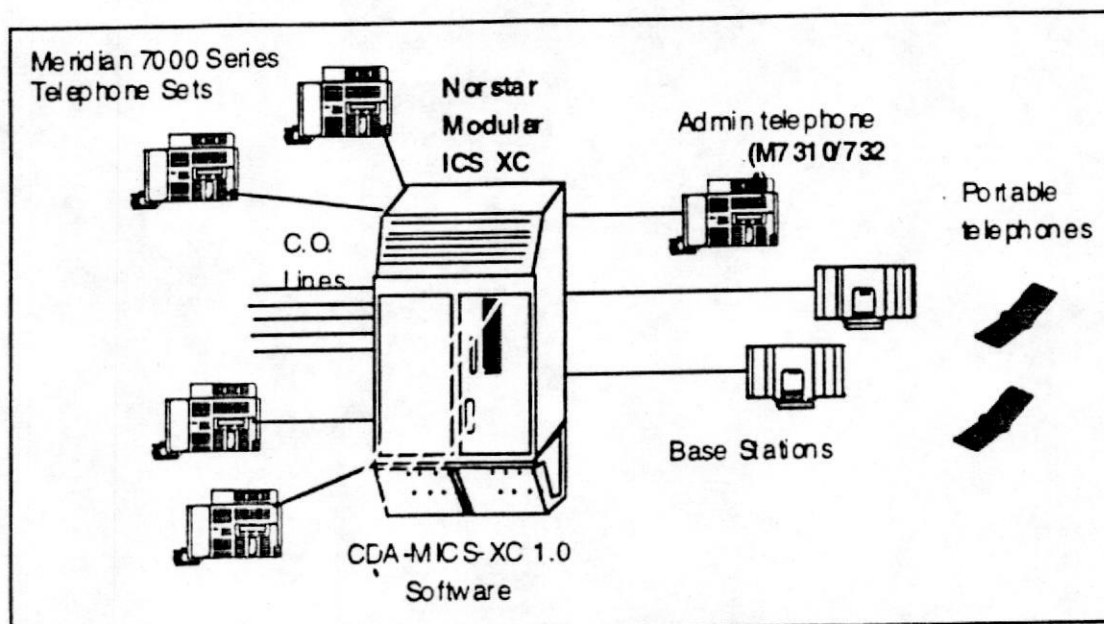


Figure 1.0: Norstar COMPANION System Elements

Portable telephones can be easily added to a Norstar COMPANION system since they are not tied to any physical ports. Base Stations plug into regular TCM station set ports and are supported either by the Norstar PLUS Modular ICS core system (KSU) or additional copper or fiber station modules (some restrictions apply). *Remember, the core system (KSU) hardware and software for a Norstar 3x8, COMPACT, or Modular 8X24 must be upgraded to ICS in order to support the COMPANION application.*

The Norstar COMPANION system (CDA-MICS-XC 1.0) can support up to 32 base stations/32 cells and supports up to 60 portable telephones in addition to the Norstar 'Wireline' configuration. Various configurations of wireline and wireless sets can coexist on the Norstar-PLUS Modular ICS platform. A new Norstar combination expansion card will allow upward expansion of a Norstar Modular ICS system to a 12 port digital system. Each port can be connected to either a trunk module supporting 12 lines or a fiber station module supporting 16 wireline sets/wireless base stations. Please see the following section titled 'Norstar COMPANION Capacity' to determine possible configurations.

The integrated Norstar COMPANION provides not only wireless capabilities but also all the existing Norstar features such as T1 trunking. The two digital trunk cartridges in the KSU are capable to support two PSTN links, each at 1.544 Mbps with 24 B-channels. In addition, the product is compatible with Norstar Voice Mail.

Norstar COMPANION Capacity:

Wireless Capacity

Up to 60 registered portables telephones or users

Wireline Capacity

Up to 192 wireline sets/Ports

Base Station Capacity

Up to 32 Base Stations

Cell Capacity, Coverage Area

Up to 32 cells, Up to 3.3 million sq. ft.

Features

Calling Line Identification (CLID),

Calling Party Name Display (CPND)

Visual Message Waiting Indication (VMWI) with Norstar Voice Mail

Mobility Features

- Two-way Calling
- Mobility Hand-off
- Interference Hand-off
- Dynamic Channel Allocation
- Digital radio technology providing wireline voice quality
- Intra-system Synchronization
- Transfer When Lost
- Portable Host Line Number Identification

Maintenance

- COMPANION Deployment Tool
- COMPANION Diagnostic Software
- Detailed Provisioning Procedures

Administration

- Auto-administration of radio environment
- Set-based administration terminal support
- PC-based administration support (Norstar Manager)

Standards - CT2Plus Compatibility

The COMPANION products operate in the dedicated 944.0 - 948.5 MHz spectrum for CT2Plus Class 2 standard. Customers can operate these systems free of air time charges and without purchasing any radio spectrum of their own. The systems provide facility-wide coverage for up to ten million square feet with hand-off and roaming between the cells created by the systems' Base Stations. The digital transmission between the Base Stations and the portable telephones means wire line quality sound as well as secure, non-eavesdropping conversations.

The CT2Plus standard was designed for low power digital radio communications between a Base Station and a portable telephone. CT2Plus uses the 944 - 948.5 MHz radio band for both voice and common signaling information. The 948.5 - 952 MHz radio band is held in reserve for future demand.

Features Supported on Norstar COMPANION:

Features supported on the C3020 portable on Norstar COMPANION include the following:

- | | |
|-------------------------------|-------------------------------|
| ■ Alternate line selection | ■ Hold |
| ■ Automatic line selection | ■ Intercom key |
| ■ Call Forward | ■ Inter-digit dialing timeout |
| ■ Trunk Answer | ■ Multiple line access |
| ■ Call Information | ■ **Page |
| ■ Call Pick-up | ■ Prime line |
| ■ Centrex/PBX access features | ■ Private line |
| ■ Conference | ■ Release |
| ■ Differentiated ringing | ■ Service confirmation |
| ■ Dialing out | ■ *Set names |
| ■ Dial tone timeout | ■ *Speed Dial |
| ■ End-to-end signalling | ■ Set Lock |
| ■ External line access | ■ Transfer |

* Some restrictions apply

** additional hardware required (ATA)

Twining: When a portable telephone and Norstar set share a single telephone number or Directory Number (DN), they are 'twinned'. With Norstar COMPANION, a COMPANION portable on Norstar can be a person's only telephone or it can be 'twinned' with a Norstar set (M7000 series).

When the portable and the Norstar set are twinned, the user's primary telephone (the portable or the desk telephone) is programmed as the prime DN and the twinned set has the DN answer key. With this configuration, both the Norstar set and the COMPANION portable will ring on all incoming calls.

Mobility Features:

Roaming

Roaming allows the portable telephone user to make calls, receive calls and access business features anywhere within the coverage area.

If the portable telephone is in range of Base Station, the Norstar COMPANION system sets up the call. The Norstar COMPANION system determines the appropriate Base Station and selects a free radio channel on the Base Station.

If the portable telephone cannot be reached (the portable telephone may be switched off, busy or out of the coverage area), the call can be routed to back-up answering, using the hunting or call forwarding capabilities of the existing telephone system. Absence of dial tone indicates that there are no free radios on the Base Stations in the area. The user can then move to a different location,

try again later or use a desk telephone. This should be a rare occurrence if the system is correctly provisioned.

Hand-off

For a portable telephone to be truly mobile, there must be no loss of service. Therefore, as a user moves from one cell to another, the call is handed off from a Base Station in one cell to a Base Station in the next cell.

To make this possible, the Norstar COMPANION system constantly monitors the strength and quality of the signal received by the base station. When the user reaches the outer limits of one cell, the Norstar COMPANION system assigns the next, most suitable Base Station to continue the call.

If a call is underway and portable telephone reaches the edge of the coverage area or enters an area where there is no free radio, call quality will degrade. The user must then decide whether to move back into the coverage area, transfer the call to a desk telephone or end the call. If the radio link is lost and can not re-established within 10 secs, the NORSTAR COMPANION can transfer the call to a preprogrammed number e.g.. a secretary or attendant's extension.

COMPANION Product Descriptions:

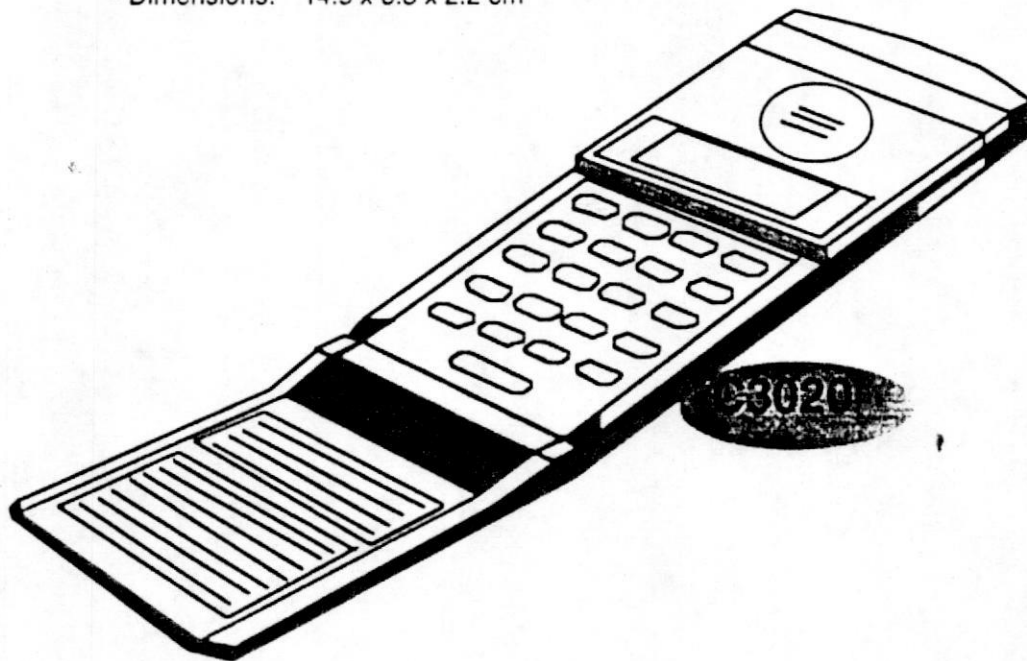
C3020 Portable telephones:

In addition to the existing telephone system business features, the C3020 portable telephone offers the following:

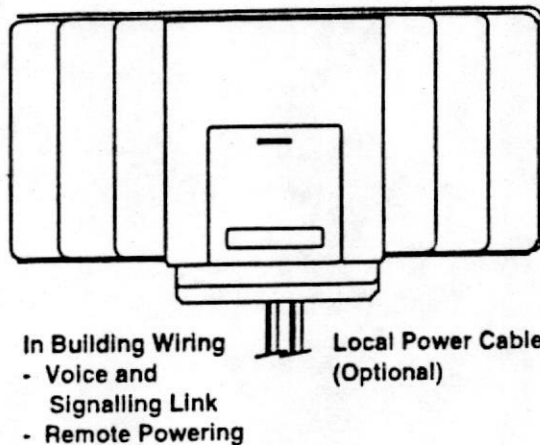
- portable telephone lock
- redial
- speed dial
- muting
- volume adjustment - 8 ringer volume levels, 3 positions for voice volume
- ring type selection - 6 different rings
- portable telephone registration and de-registration
- discrete ringing - single ring call notification

Northern Telecom will first offer the Companion 3020 portable telephone (C3020). This portable telephone is user friendly and features a large two line LCD display. The battery life is 13 hours talk time and 200 hours continuous standby time with 3 AAA alkaline batteries - 4 hours talk time and 60 hours continuous standby time with a rechargeable nickel cadmium battery pack.

- Weight: 170 grams
- Dimensions: 14.5 x 6.3 x 2.2 cm



COMPANION Base Station



Base Station Characteristics

Size: 20 x 32 x 5 cm
Weight: 0.8 kg
Color: dolphin gray

Principal Features and Functions of the Base Station

- CT2Plus standard (944 - 948.5 MHz)
- 2 radios - can support two simultaneous calls
- Range: up to 200 m (600 ft) range in open environment, 20 - 70 m (60-250 ft) range in-building**
- Wiring: standard 3 or 4 twisted pair 24 AWG wiring
- Distance from Norstar COMPANION: 1200 m max.
- Powering options: remote powering using the Remote Power Interconnect (RPI) or a 110V/220V plug-in transformer that connects to a local AC power outlet
- Distance from RPI: 500 meters max. (1 pair) , or 800 meter max. (2 pair wiring)
- Cell Provisioning: maximum 32 cells. 1 to 4 Base Stations per cell depending on traffic. Base Stations forming a cell must be separated by at least 0.3 m. All Base Stations in a cell should be within 1.5 m of each other.
- Security: CT2Plus is a low power digital standard therefore it provides a higher degree of security than traditional analog wireless phones.
- Antenna diversity: two antennae per radio channel - the Base Station samples the radio channel reception on the two antennae and continually switches to the antennae with the best reception
- Dynamic channel allocation*
- Self maintenance functions

* *Dynamic Channel Allocation* is used to automatically scan and select the best available channel on a call by call basis.

**The maximum Effective Radiated Power (ERP) is 10 mW, which gives a maximum range between Base Station and portable telephone of up to 200 m in an open environment. In building, the range is typically 20 - 200 m (60- 600ft) depending on building construction and is omni-directional.

Base Station Location

The Base Station can be wall or ceiling-mounted using the bracket supplied. The bracket is attached to the wall by two screws. Once the bracket has been screwed to the wall and the in-building wiring terminated, the Base Station itself can be mounted onto the bracket. It slides in providing a tight friction fit. Once installed the Base Station conceals the bracket.

Base Station Cabling Requirements

Each Base Station is connected to the Norstar COMPANION by a standard three or four pair cable. One pair is devoted to voice and signaling traffic, one of two pairs can be used for remote powering. It is recommended that 2 cables are installed for each Base Station. Although only one cable is needed, the second cable will allow for capacity expansion in the future.

Power Supply

Each Base Station can be remotely powered from a *Remote Power Interconnect (RPI)* using one or two pair of the 3 or 4 pair cable. *The following options are available: RPI-8 (powers up to 8 Base Stations), RPI-16 (powers up to 16 Base Stations), and an RPI-8 to RPI-16 upgrade kit.* Each port can accommodate 1 or 2 pair wiring to each Base Station. Battery backup can also be provided. The loop length from the RPI to a Base Station is a maximum of 500 m using one pair or 800 m using two pairs. If a system requires power for more than 16 Base Stations, additional RPIs can be used.

An optional dedicated 110V or 220V transformer connected to local AC power by a 4 m cable can also be used.

External Antenna Connectors

An optional external antenna is available for customers requiring coverage outside the building (in a garage, for example). Indoor versions of this antenna may also be used to increase the coverage options within a building. One or two external antennae can be connected to each Base Station via RG 58/U coax cable.

Determining a Norstar COMPANION System Configuration

Before a NORSTAR COMPANION system is quoted and installed, the customer will be asked a series of questions regarding their premises, current system, telephone usage, etc., in order to estimate the configuration required to satisfy their needs. In addition, a pre-installation site visit will be required by a provisioner or sales representative, who will take or obtain measurements of the physical site and determine the area that must be covered. This information is required to determine the correct number of base stations necessary for the desired coverage area and traffic (# of COMPANION portables).

The first step in the quotation process is to determine the Norstar configuration requirements to support wireline terminals, Norstar Voice Mail, T1, , etc. that have been requested by the customer.

The next step is to determine the number of base stations required to provide site coverage for a given number of COMPANION portables that will be used in the coverage area defined. Once the number of base stations required is determined, the additional station ports required for the base stations (1 station port for each base station) must be factored in to ensure that enough station ports have been allocated to support both wireline and wireless applications on the Norstar System.

Determining The number of base stations required:

The number of base stations required to provide coverage for a given area can be determined in various ways. The most accurate approach is to have an authorized COMPANION technician determine the number of base stations required using a site planning methodology which includes the use of a COMPANION Deployment Tool (CDT). This approach provides accurate results, and should be used for large systems (> 10 cells).

A second approach is to use the tables and predictive tools (to be sent out in the near future) to calculate the number of base stations required based on the Customer location ceiling height, longest diagonal length, square footage (meters/feet) of coverage required, and the number of C3020 portables to be used. The tables can be used for configurations up to 10 cells and 32 portables.

Please note that estimating the number of base stations using the tables is not guaranteed by NORTEL to be 100% accurate in all cases due to varying conditions within each customer location being quoted. However, our experience with North American building sites indicates that these tables are very accurate in predicting the number of base stations required for a given customer application (<10 cells) provided the information inputs for square footage, ceiling height, and longest diagonal length are accurate.

Companion Deployment Tool (CDT)

For more complex and large deployments (>10 cells), the **Companion Deployment Tool (CDT)** should be used before quoting the system. The Companion Deployment Tool (CDT) consists of a CDT Base Station, CDT Stand and CDT Battery Assembly, and is used in conjunction with a portable telephone. It is used before installation to test the radio propagation characteristics of the site. This step is important for ensuring the optimal placement of each base station and an accurate system quotation.

System Administration/Maintenance

Portable Telephone Registration/De-Registration

Before the NORSTAR COMPANION Controller will acknowledge a particular portable telephone, it must be registered with the system. Registration dedicates a DN or answer key. The portable telephone then takes on the answer DN / Prime phone. This is done using the administration telephone or Norstar Manager and portable telephone itself.

As an extra security measure, a portable telephone can also be de-registered, if necessary, so that further use is impossible (until re-registered again). For de-registration, access to the portable telephone in question is not necessary.

System Maintenance Support Tools

Once the system has been installed, **The Companion Diagnostic Software package (CDS)** can be used to analyze system performance and diagnose system problems. CDS uses a Remote Access Device (RAD) and a 386 personal computer to run maintenance and diagnostics procedures locally or remotely. The CDS can be used for a wide range of operations, from checking system performance to problem diagnosis. A TCM port is required for the RAD operation.

Norstar Manager is a PC Windows based administration and maintenance tool for Norstar COMPANION. Norstar Manager includes the COMPANION manager application available for Meridian 1 COMPANION.

COMPANION Manager is a Microsoft Windows based application for an IBM compatible Personal Computer (PC) that is used for administration and maintenance of a Meridian COMPANION system. COMPANION Manager offers all features currently available through a 7310 or 7324 administration terminal, with the added capability of Backup and Restore of programmed data, and remote administration of Meridian COMPANION systems.

Specifically, COMPANION Manager supports the following features:

- User-friendly man-machine interface (MMI) providing choice lists and default settings. Any user with Microsoft Windows experience can quickly learn to navigate the pull-down menus of COMPANION Manager.
- Creation of and changes to Meridian COMPANION configuration and administration data, locally or remotely
- Performing maintenance functions
- Registration and de-registration of portables
- Displaying system, card and device status
- Ability to run in a multi-user or single user environment
- Generating and printing system, card and device reports to a file or printer
- Backing up (uploading) the Meridian COMPANION controller data to a local data base
- Restoring (downloading) a data base to a Meridian COMPANION controller
- A scheduler to run, at customer-specified times, backup and restore operations.
- Administration of the Remote Access Device (RAD)

COMPANION Manager can be used by distributors to enhance the local and remote support they provide to their customers, or it can be used by end-customers who choose to administer their own systems.

For information on Norstar Manager, please refer to the Norstar Manager Channel Introduction package.

Ordering Codes/Information:

PKG ENG/CPC CODES	Description	QTY
NTGA57AA - A0643599	Norstar COMPANION 6X2 Base System (ENG) Includes:	
A0601587	C3020 Portable Telephones	6
A0601486	C3020 110V Charger with Battery	6
A0403378 NT0P30DA-93	Base Station	2
A0386334	110V Plug-in Transformer	2
A0632420 NT7B85AA-93	Norstar CDA-MICS-XC 1.0 software	1
A0632421 NTAB1523	Norstar COMPANION Doc. Kit	1
P0725809	COMPANION Site Planning Guide	1
NTGA57AC - A0643601	Norstar COMPANION 12X4 Base System (ENG) Includes:	
A0601587	C3020 Portable Telephones	12
A0601486	C3020 110V Charger with Battery	12
A0403378 NT0P30DA-93	Base Station	4
A0386334	110V Plug-in Transformer	4
A0632420 NT7B85AA-93	Norstar CDA-MICS-XC 1.0 software	1
A0632421 NTAB1523	Norstar COMPANION Doc. Kit	1
P0725809	COMPANION Site Planning Guide	1

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**For further information about COMPANION or related products contact:
Your sales representative or**

**MCS Sales Development CALA
1500 Concord Terrace, MS A0341M
Sunrise, FL 33323
(305) 851- 8454
(305) 851 - 8300**

or

**Sheryl Chela Sligh
PCS Product Manager
(305) 851-8547**

Sales and Marketing Bulletin

Number: CALA-117-MB
Date: May 1997

Norstar-PLUS vs. Lucent Competitive Sales Guide

It is not a secret that Lucent Technologies is one of Norstar's most fierce competitors. Their Partner and Legend systems compete directly with Norstar's Compact ICS and Modular ICS. The intent of the attached document is to give you an idea of some of the strategies used by Lucent to position its product against Norstar. The document also includes information on how you can take advantage of Lucent's attacks over Norstar.

Some of the features and applications described in the document are not available in the CALA region yet. They will be available before the end of 1997.

The last two pages of the document include a comprehensive listing of deficiencies of the two Lucent products when compared with the Norstar-Plus products.

If you have any questions or comments, or require further information, please contact:

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Norstar vs. Lucent Competitive Sales Guide

Introduction

It's no secret to anyone who sells Norstar that Lucent Technologies is one of Norstar's most common competitors with their Partner and Legend systems. Lucent has a lot of "feet on the street" and a big advertising budget that ensures that they will bulldoze their way into a lot of your potential sales in most areas of the U.S., and to a lesser extent Canada.

Therefore, you'll need to be more knowledgeable than the Lucent sales person if you're going to consistently win against them. Using this sales guide we hope to arm you with all the information you'll need to win. Once you understand the tactics Lucent sales people use, and the overall value of Norstar, closing business will be considerably easier.

Nortel-A Market Share Leader

Norstar continues to claim the overall number one position in the world market share numbers for the small business system market.

Norstar also continues to claim the number one market share position in Canada as well. Nortel's market share was up from 60.3% in 1995 to 63.2% in 1996. Lucent lost ground in Canada, falling from 4.5% in 1995 to 4.2% in 1996. Again in 1996 Nortel was by far the market leader in all segments of the Canadian market.

	'95	'96	Change
Norstar	60	63	+3
Lucent	4	4	0

Table 1-Canada Market Share

In the U.S., Lucent is still using the 1995 market share figures in their presentations to back their claim as the U.S. small business system market leader. But their picture isn't as bright when 1996 numbers are used. According to Infotech Consulting Lucent fell from 25.6% share in 1995 to 23% in 1996. Norstar went from 15.4% share to 17.8%.

	'95	'96	Change
Norstar	15	18	+3

Lucent	26	23	(3)
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Table 2-U.S. Market Share

When you break down the market share numbers into station shipments, Nortel has the lead in the 21-40 and the 40+ station size. And with the introduction of Norstar-PLUS Compact ICS last year, we are gaining on Lucent in the 2-10 and 11-20 station size.

	2-10	10-20	21-40	40+
Norstar	#2	#2	#1	#1
Lucent	#1	#1	#2	#2

Table 3-Station Segment Position

Nortel is gaining market share with a single communication system-Norstar. Lucent is currently selling Partner and Legend, two systems that are totally incompatible with each other. If a customer outgrows Partner, then what? Not even Partner telephones work on the Legend let alone any of its other equipment. Customers who buy Compact ICS can migrate the largest part of their investment to the Modular ICS.

Lucent Declares War

In an attempt to regain market share, Lucent has declared a price war on Norstar by giving their salespeople 10% to 50% discounting ability in certain situations when competing against Norstar. But Nortel doesn't feel the need to fight Lucent on price because when Norstar is positioned correctly, it is by far the better system than either Legend or Partner. Lucent's price discounts are really just bringing the price of their products a little closer to their true value as you will see later.

So your first objective is not to panic when you hear that Lucent is discounting their price in a bid against Norstar. Nortel clearly has the better product and we are winning sales when Norstar's value is positioned correctly, even when Lucent prices their products significantly lower than Norstar.

Your second objective then is to understand where Norstar's value is.

That's what this sales guide has been developed to do.

Lucent Price Discounting

Besides offering 10% to 50% discounts on some sales, Lucent also has some other pricing tactics they use. One of the ways Lucent is discounting their price is through their "A Competitive Advantage" program. If a sales person is in a competitive bidding situation with Nortel, they can offer the customer a 10% rebate if the customer provides Lucent with a Nortel proposal. They can only offer a 5% rebate on other competitors (we should feel special). This discount can only be offered if our proposal is priced less than Lucent's proposal.

The most common way Lucent sales people get their price down when it comes to Legend sales, is that they populate the system with cheap analog sets. This tactic reduces the overall usability of the system. With analog sets a customer loses such functionality as LCD displays, speakerphones, station messaging, Do Not Disturb, auto dial buttons, date and time, caller line ID, and advanced features such as integrated voice and data and computer telephone integration. Those unhappy users stuck with analog stations also have to manually enter feature codes, which cuts down on the usability of the system, and therefore the productivity of the user. Table 4 illustrates a few of the many feature codes that must be entered by users with analog sets.

Redial	#84
Leave Message	#25
Paging	#9 (can't receive page)
Park	Flash15-dial extension

Table 4—Analog Station Feature Access

At other times Lucent will offer a lower initial product cost, but they require the prospect to accept their multi-year maintenance contract, of which payment is weighted mostly on the front end of the deal. Since today's dollars are worth more than tomorrow's dollars thanks to inflation, Lucent still comes out in an acceptable financial position even though they may not make much money on the initial equipment sale.

It depends on the Norstar distributor as to what maintenance contracts are offered during a Norstar sale. If you are not using maintenance contracts to subsidize the initial sale, knowing that Lucent does could be used to your advantage.

Another form of price discounting Lucent is using to win sales is in the form of giving away free products. As you have seen in the market share numbers, Norstar's market share has been growing without giving away free products or offering deep price discounts. Lucent's "freebies" and price discounts are just a way for Lucent to add value to their otherwise overpriced system.

Platform Assurance Guarantee

Lucent has what they call a "Platform Assurance Guarantee" that allows a customer to return a Legend or Partner within the first year of purchase. If customers choose to take advantage of this program, they would be refunded the equipment and labor cost that they have invested. This program has been good for Nortel since it has given us the opportunity to sell Norstar to Lucent customers who were dissatisfied with Legend.

Nortel offers a similar program, but it is only for a period of three months. However, this hasn't been an issue for us since Norstar customers are satisfied customers.

Extended Warranty

As a way to win sales, Lucent has been offering anywhere from two to five year warranties, with two years being common. Our distributors offer a variety of warranty terms and options, but Norstar has a return rate of less than one-tenth of one percent, and most of those product returns are tested with no fault found, therefore a warranty is not something that is used much on Norstar.

When it comes to reliability Legend and Partner don't compare. For instance, Norstar's Mean Time Between Failure (MTBF) rates are significantly higher than Legend's published figures. MTBF shows the average time the system is expected to operate before any type of failure occurs. Legend's MTBF is published in the *Merlin Legend*

Communication Release 3.0 Equipment and Operations Reference manual as only 2.1 years. Norstar-PLUS Modular ICS has a MTBF of over 50 years.

Partner doesn't even have published MTBF figures, but given that it consumes far more power and produces more heat than either Legend or Norstar, its reliability is probably lower than Legend.

Norstar Value

Computer Telephone Integration

Up until this year the market for CTI products has been, and perhaps still is to some extent, fairly weak. However, 1997 has been touted as the year CTI products take off. Now that the industry is developing more and more products using Microsoft's TAPI "standard," end-users are starting to learn what CTI can do for them.

Legend and Partner don't even support TAPI today. The former equipment side of AT&T, which is now Lucent, was one of the original developers of TAPI's competition—TSAPI. TSAPI requires an expensive Novell LAN before it can be implemented.

Only the proprietary Lucent PassageWay CTI option is now available for Legend and Partner. PassageWay is not TAPI compatible, meaning that it only supports applications developed specifically for Legend and Partner. Purchasing a closed architecture system like Legend or Partner means that customers will be locked into whatever Lucent decides to offer for CTI. If Lucent hasn't had someone develop a specific software package for their systems, that means you can't get it anywhere else.

Norstar's TAPI compatibility means that a wide variety of software applications are already available for it. And Norstar also supports TSAPI applications as well.

Integrated Services Digital Network

Lucent has been using the fact that Norstar doesn't yet offer ISDN as a weapon against Norstar since they first supported it. The fact is that it isn't really sold as often as it's used to win a sale, but they effectively use ISDN as a scare tactic.

Lucent currently has both ISDN BRI and PRI on Legend. Lucent has also demonstrated support of ISDN BRI on Partner, but with Partner's analog to the desktop architecture, it can't support ISDN to the desktop. Lucent's support of ISDN for Partner means that they tack on an external ISDN terminal adapter and connect the analog output of the terminal adapter to Partner's analog CO line cards. This defeats the whole purpose of ISDN.

Norstar will soon have a real ISDN BRI available for both Compact and Modular ICS. Not only will Norstar have ISDN, but it will have some great applications available for it as well.

Norstar's ISDN BRI will support point-of-sale or other light data applications over an ISDN BRI D-channel, or what's called D-channel packet switching. The classic use for D-channel packet switching is for credit card verification. Normally after a credit card is scanned you would have to wait for 20 seconds or more on each transaction for credit approval. Using Norstar's D-channel packet switching, credit verification will be almost instantaneous. For a high volume retail store, this could add up to a time savings of around an hour a day. Lucent can't duplicate this application with the Partner or Legend.

Another application for Norstar's ISDN BRI is for high speed data such as Internet access. Norstar will soon have an ISDN data device that allows Dynamic Bandwidth Allocation. Dynamic Bandwidth Allocation will allow a user to use both B-channels of a BRI line to access the Internet while the Norstar telephone can still be used. So if a voice call comes in, the user is notified with Caller Line ID on the PC's monitor. If the user decides to pick up the call, the Internet data call drops one of the B-channels, therefore allowing a simultaneous voice and data call. Once the user hangs up the voice call, the Internet data call takes back the B-channel used by the voice call, and now both B-channels are in use for the data call again. Once again, Partner and Legend can't handle this application.

One of the great features of Norstar's ISDN data device is that it will also support TAPI applications. The ISDN data device will allow users to take advantage of the multitasking capability of their PCs by switching between TAPI applications and data calls. And it will even come with its own TAPI application called the Personal Call Manager. So a user could be surfing the Internet and switch to his or her Personal Call Manager to dial a call. Of course, this is where Norstar's Dynamic Bandwidth Allocation comes in handy. Partner and Legend don't even have a TAPI device, let alone one that supports ISDN.

Wireless Telephones

Maybe most customers don't believe their business needs to adopt wireless telephones today, but that's the way they also felt about voice mail a few years ago. Now that voice mail's cost has declined, it is becoming table stakes for most businesses. Wireless costs too will eventually come down. Once they do, the competitive environment most businesses play in will eventually force them to adopt this new technology to help them keep their customer service at the same level as their competition. Since Norstar supports a true wireless phone and Legend doesn't, you should be positioning this in the same way as Lucent is positioning ISDN against us. We have it now, they don't.

For larger installations, Lucent's TransTalk cordless phones cost about as much to implement as Norstar's Companion with very few of the advantages Companion provides. Their pocket telephones cost around \$1200 per user, yet they operate in a frequency that the FCC can't do anything about if your neighbor has one of the 550 possible 900MHz devices that could interfere with your TransTalk. That isn't investment protection like Companion provides.

Companion also provides total building coverage versus TransTalk's single-cell/single-user coverage. Companion's roaming capability ensures that a user can walk around a building without losing a call. Lucent is using the same technology you would use in your home

for their so called "wireless" system. That just isn't what you would expect from a company who claims to be a technology leader.

Voice Mail/Applications Platform

When it comes to voice mail for Legend and Partner, Lucent also hasn't demonstrated their claimed leadership position. Partner voice mail has always been, and still is, more limited than any Norstar voice mail system.

Since Legend's inception, Lucent's voice mail solution for Legend has been a product called Merlin Mail for Legend. This product is old and has had little development, therefore Lucent has recently released a product called the Legend INTUITY AUDIX VS. Lucent calls the INTUITY AUDIX VS a multimedia messaging solution. The INTUITY AUDIX VS system includes voice messaging and automated attendant capability, plus optional fax messaging, call accounting, and networking.

INTUITY AUDIX VS is a more advanced messaging system than Merlin Mail, but it still doesn't handle as many ports as Norstar-PLUS Voice Mail. Norstar-PLUS Voice Mail can handle up to 16 ports while the INTUITY AUDIX VS only supports 12.

INTUITY AUDIX VS also doesn't support advanced applications like the following two.

Integrated Voice Response (IVR)

Interactive Voice Response (IVR) has been used for years in such applications as banking by phone. Now IVR is affordable for almost all applications so a business' customers can call and receive answers to their questions automatically, 24 hours a day.

The Norstar-PLUS Applications Module will soon have a software option for IVR. A software application generator toolkit will allow a business or software developer to create a custom IVR application for a unique business requirement. Nortel will also offer prepackaged IVR applications for specific vertical markets.

The IVR capability is not available on the INTUITY AUDIX VS. The only other option Lucent has for IVR in our market would be on the INTUITY 5, which is significantly more expensive (\$30K for 4 ports) than INTUITY AUDIX VS.

Desktop Messaging

Norstar's Desktop Messaging is going to allow users to check all of their voice, email, and fax messages from a single screen on their desktop PC. Users will be able to instantly identify and prioritize their messages and respond to the most urgent messages first.

Norstar's Desktop Messaging option will run on the same Norstar-PLUS Applications Module that Norstar-PLUS Voice Mail runs on, thereby eliminating the need to purchase separate hardware for voice mail and desktop messaging (a Microsoft Exchange e-mail server will still be required).

Lucent doesn't have an affordable desktop messaging solution for Partner or Legend. The only Lucent system that currently has desktop messaging is the INTUITY 5, which now works directly with Microsoft Exchange e-mail servers. A basic 4 port/10 hour system without desktop messaging costs around \$30K. However, Lucent claims to be coming out with some form of desktop control for message management for INTUITY AUDIX VS in June of 1997, but this will not include email management/integration.

More Competitive Info

The following two pages highlight some of the reasons Norstar has more value than Partner and Legend. More detail is also available in the Norstar versus Partner and Legend Competitive Notes that are also a part of this sales guide.

Partner Deficiencies

Applications Server Platform

Partner doesn't support an applications server platform like the Norstar-PLUS Applications Module (NAM):

- The NAM will support ACD, Voice Mail, IVR, and Desktop Messaging
- An IVR application development tool will be available

Desktop Messaging and IVR

Partner doesn't have an affordable solution for IVR or Desktop Messaging

ISDN BRI

Norstar's ISDN BRI option will provide better data support:

- Partner doesn't support ISDN BRI
- Partner's analog to the desktop can't support data
- Partner can't have a data device that does Dynamic Bandwidth Allocation for Internet connectivity

Wireless Telephones

System Growth

Norstar grows to a larger system size than Partner:

- Partner: 48 stations/ Norstar: 192 stations
- No investment protection in moving to Legend

Softkeys

Partner telephones do not support softkeys:

- Norstar softkeys make the system easy to use and learn

Coordinated Dialing Plan

Partner doesn't have a Coordinated Dialing Plan:

- Partner can't network systems together with four digit dialing between them

Expanded Services Modes

Partner doesn't have Expanded Service Modes:

- Night service must be manually activated
- Night ringing can't be assigned to individual stations, only groups

Partner only supports cordless telephones in the 900Mhz spectrum:

- This frequency is not protected by the FCC, over 550 possible interference devices
- Handsets don't support roaming or handoff
- Norstar has Companion with roaming, handoff, and FCC protection

Computer Telephone Integration

Partner doesn't support TAPI:

- PassageWay is a proprietary CTI software that locks customers into Lucent applications
- Partner doesn't have an internal PC TAPI interface board for PCs with no Com port available.

Least Cost Routing

Partner doesn't have Least Cost Routing

Automatic Call Distribution

Partner doesn't support ACD

- Restricted dialing tied to Night Service

Call Log on Caller ID

Partner doesn't have a Call Log for Calling Line ID:

- Norstar's Call Log automatically logs all incoming calls

Unsupervised Conferencing

Partner doesn't support Unsupervised Conferencing:

- A conference initiator can't leave the call without disconnecting other callers

Reliability

Norstar has the highest reliability rate in the industry:

- Partner doesn't have a published MTBF, Norstar's is over 50 years

Power Consumption

Partner consumes far more power than Norstar:

- Partner costs up to \$2700 more to operate over 5 years than Modular ICS

See document #9007 *Norstar vs. The Lucent Partner* for more detail about these and other deficiencies.

Legend Deficiencies

Applications Server Platform

Legend doesn't support an applications server platform like the Norstar-PLUS Applications Module (NAM):

- The NAM will support ACD, Voice Mail, IVR, and Desktop Messaging
- An IVR application development tool will be available

Desktop Messaging and IVR

Legend doesn't have an affordable solution for IVR or Desktop Messaging

- INTUITY Audix VS doesn't have either of these capabilities
- INTUITY 5 is priced at around \$30K for 4 ports

ISDN BRI

Norstar's ISDN BRI option will provide better data support:

- Legend doesn't support Dynamic Bandwidth Allocation for Internet connectivity
- Legend's data device doesn't support D-channel packet switching
- Legend's data device doesn't support TAPI or include a TAPI application

Wireless Telephones

Legend only supports cordless telephones in the 900Mhz spectrum:

- This frequency is not protected by the FCC, over 550 possible interference devices
- Handsets don't support roaming or handoff
- Norstar has Companion with roaming, handoff, and FCC protection

Computer Telephone Integration

Legend doesn't support TAPI:

- PassageWay is a proprietary CTI software that locks customers into Lucent applications

See document #9099 *How to Beat Merlin Legend* for more detail about these and other deficiencies

- Legend doesn't have an internal PC TAPI interface board for PCs with no Com port available.

Blocking Technology

Legend's architecture can block calls:

- Only 216 time slots compared to 640 on Norstar
- Simultaneous voice/data calls on multiple sets quickly uses up slots

Coordinated Dialing Plan

Legend doesn't have a Coordinated Dialing Plan:

- Legend can't network systems together with four digit dialing between them

Expanded Services Modes

Legend doesn't have Expanded Service Modes:

- Automatic Route Selection can't be turned on automatically at different times of day
- Night service only has one timer per day, all phones must enter at same time
- Restricted dialing tied to Night Service

Call Log on Caller ID

- Legend doesn't have a Call Log for Calling Line ID:
 - Norstar's Call Log automatically logs all incoming calls

Unsupervised Conferencing

Legend doesn't support Unsupervised Conferencing:

- A conference initiator can't leave the call without disconnecting other callers

Reliability

Norstar has the highest reliability rate in the industry:

- Legend's MTBF is only 2.1 years compared to over 50 years for Norstar

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Attn: Marketing Communication

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if you are a
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☐ Telsets

Switching: *

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Por favor especifique el producto:

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cliente para Magellan

☐ Telsets

Conmutación:

☐ Norte América

☐ Internacional

Transmisión:

☐ ANSI

☐ ETSI

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Título: _____

Compañía: _____

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Product Bulletin

Number: CALA-083-PB

Date: November 1997

Introducing X11 Release 22.46 (22C) Software Upissue

Nortel CALA Inc., announces the introduction of Release 22.46 (also known as 22C). This upissue replaces the existing Release 22.16 software introduced this past June. This bulletin summarizes the enhancements and bug fixes that have been incorporated into this upissue, provides you with some key advisements to consider and reviews some modifications to feature packages.

Note: This is NOT a complete guide to the content of X11 Release 22. To obtain complete information on X11 Release 22, make sure you also reference the following CALA bulletin: CALA-001-GRB, October 1996.

Enhancements

There are three enhancements being introduced with 22.46:

- a) Network Authorization Code (NAUT)
- b) Option 81C Clock Hunting
- c) Fault Recover Improvement

Network Authorization Code (NAUT)

The Network Authorization code feature enables selected users to temporarily override the access restrictions assigned to a station or trunk. A user can enter an authorization code to access more of the system facilities than would normally be allowed by the particular station or trunk because of the assigned NCOS (Network Class of service), COS (Class of service) and TCOS (Traveling Class of service). The NAUT feature provides up to 20,000 authorization codes of 1 to 14 digits (with Release 13 and later).

Enhanced functionality:

When an Authorization code is used to place an outgoing call and a conference call is made to a second outgoing call, then an Authorization code is required. This generates CDR for the second call involved.

A new prompt 'NAUT' in LD 15 is provided in the FTR_DATA of the Customer Data Block. If the input for 'NAUT' is NO, the existing functionality is maintained. If the input for 'NAUT' is YES, then the user is prompted for an auth code entry. LD 21 is also modified to print the new prompt 'NAUT'.

The user is prompted for an auth code entry only if the Facility Restriction Level associated with the NCOS of the incoming (or two-way) trunk is less than the minimum FRL of the route list that NARS, BARS, or CDP would use for the call. In addition if the user is at a remote switch, the user

may be prompted for the auth code entry if the route is defined in the Route Data Block to prompt for an auth code entry on incoming NARS, BARS or CDP calls. If using DISA, the user is prompted for the code entry if the FRL of the NCOS assigned to the DISA DN is less than the Minimum FRL of the route list that NARS, BARS or CDP would use for the call.

With 'NAUT' set to YES in the Customer Data Block, Auth code is reprompted for Call Transfer and Conference.

With 'NAUT' set to YES in the Customer Data Block, Auth code is reprompted when accessed through the DISA feature.

With 'NAUT' set to YES and OPT set to Call Forward Forwarding Originating (CFO) in the Customer Data Block, a caller may be prompted for an auth code entry after a call to a station that forwards the call to NARS, BARS or CDP number.

With 'NAUT' set to YES and OPT set to Call Forward Forwarding (CFF) in the Customer Data Block, the user will not be prompted for an authcode on making a call to a station that forwards the call to NARS, BARS or CDP number.

With 'NAUT' set to YES in the Customer Data Block, CDR is generated for both trunks involved.

With 'NAUT' set to YES/NO in the Customer Data Block, an attendant is reprompted for an authcode entry if the FRL required to access a route list for a NARS, BARS or CDP call is greater than the FRL of the attendant's NCOS.

The Network Authorization code will be prompted only if it is configured (in LD 88).

Reference: BV37132

Option 81C Clock Hunt Enhancement

The process for the searching for the System Clocks and identifying their addresses during system sysload and initialization is provided by the Clock Hunt feature. During initialization and sysload, both sides of every group in the database are searched for the System Clocks' location. All network groups in the database are searched for clocks, and any excess or deficiency is reported to the crafts person as an error message. The Clock Hunt feature is necessary since option 81C System Clocks are no longer required to reside in fixed group locations.

Enhanced Functionality:

Since the option 81C System Clocks are not in a fixed group location, the Clock Hunt Enhancement has been developed to allow the craft person to check the Clock location without going through a initialization or sysload. The Option 81C Clock Hunt enhancement modified the Status Clock Controller (SSCK) command in overlay 60. Once invoked, the SSCK command will find all the clock addresses in the system. Upon locating all the clocks, if the system clock addresses found are different from the addresses found during system initialization, an error code DTI205 is generated to inform the craft person of the clock mismatch.

A prompt, CHANGE CC FROM XX TO G S? Y(N), has been added. This prompt follows the DTI205 error message to allow the craft person to accept or reject the clock addresses found.

If user enters 'Y' to the prompt, then the following will happen:

- The global clock address is updated to the new address.
- The clock controller card at new global address is enabled and the LED is turned off.
- The status and new location of the updated global clock address are

printed.
If the user enter 'N' or 'CR' (default), then the global clock address retains the same address. The current clock address status and location are not printed (since they were already printed).

The Input/Output changes to overlay 60 are:
SSCK x

Get the status of system clock
address

The system will respond with one of the following:

1. ENBL
CLOCK ACTIVE/STANDBY
GROUP G
SIDE 0/1
SYSTEM CLOCK.....

1. If only one clock is found on side 0/1, and if it is enabled, then clock status and address are printed

...
NO ERROR

2. If the clock is on side 0/1 is disabled.

2. DSBL
GROUP G
SIDE 0/1

3. If no clock found at the time of system initialization.

3. UNEQ

If the software finds an error during CLOCK HUNT routine, one of the following error messages are printed. This only happens if the clock status is DSBL or UNEQ:

DTI205 G S

Clock found in group G, side S is different from its global address.

CHANGE CC FROM XX TO G S?
Y/N (N)

The craft person can select either 'Y' to change the clock address or 'N' to retain the same address. Note: XX means current group & side or UNEQ.

DTI206 S G1 G2 ...

More than one clock has been found in side S. The Group of the extra clock(s) is provided.

DTI207 S

No clock has been found in side S. This indicates that either there is no clock in side S or the clock installed in side S has its shelf-side switch set wrong.

The error message DTI205 is newly introduced with the option 81C Clock Hunt Enhancement.
Reference: BV58119

Fault Recovery Improvement

Fault tolerance of computer based systems has become more and more important in all industries, but particularly with the emergence of new applications where system availability is the heart of the business. Redundancy in many applications is of paramount importance, and coupled with superior recovery mechanisms aimed at hardware or software fault recognition and recovery, provide the value in such applications.

As Meridian 1, with the redundant 680xx processor family employed (61C, 81, 81C), finds its way into new applications, such as those introduced on X11 Release 22 which place heavier and heavier demands on its performance, fault recovery anomalies discovered in field applications and lab analysis led Nortel to a comprehensive review of existing fault recovery mechanisms in a search for improvement opportunities. Several areas were identified which could be modified to enhance the way redundant systems recovered in the event of a fault. These improvements targeted the Meridian 1's ability to detect and recover from software and/or hardware errors seamlessly, with no impact in system operation or performance.

X11 Release 22.46 contains a number of fault recovery improvements detailed below. These improvements are primarily applicable to redundant processor systems and are intended to provide the system with an elegant method of recovery.

A major concern with any system surrounds fault recovery from hardware faults, and the system's ability to gracefully recover with minimum impact to the users of that system. The fault recovery activity described below was targeted at supporting the Meridian 1 as it is used in evolving applications. The capabilities described below will assist in ensuring the system remains stable through the hardware trouble shooting process. These improvements are meant to assist in machine recovery in the event of hardware faults and are not tied to specific root cause failures.

Increased Robust Facility:

The fault recovery improvements address several areas to enhance the system recovery in the event of a hardware fault. The increased robustment of the fault recovery facilities include:

- Ability to perform Network Bus Error (BERR) analysis while the task is "locked". This ability may prevent system initializations. Close attention should be paid to all Bus Errors until the root cause of the Bus Errors has been determined. Note: A 'task' is one of many prioritized activities running on a Meridian 'C' series processor.
- In the event of a system Warm Start, both Core processors will be checked for their relative health. A graceful CPU switchover will be performed if required to ensure the system recovers on the best Core Processor Unit. Analysis of the report log messages should be done in the event of any non-self initiated Warm Start event to verify hardware integrity.
- Software recovery has been improved to attempt recovery of the CNI port in the event of marginal hardware conditions. Changes have been made to the recovery routine when an intermittent fault is seen from the Network in the form of a Bus Error. The marginal hardware conditions may have caused the CNI port to disable itself prior to X11 release 22.40 resulting in a possible system initialization. Attention must be paid to BERRs to determine the cause of the CNI port disable.
- The fault recovery facility will turn off the interrupts to the processor for the System Resource ASIC (SRA) during Warm or Cold Start. This change will prevent the event of

the hardware watchdog timer expiring, which will cause the system to initialize and swap CPU's or Cold Start (reload) if redundancy is not available. By turning off the interrupts, the processor is not confused upon recovery by unserviceable interrupts which are presented during restart sequences. The root cause of the watchdog expiring may be attributed to either a hardware or a software fault.

- The exception handling during ISR (Interrupt Service Routine) has been improved. With this change, the system will recover from the bus error and will not perform a warm start if an inaccessible hardware address is encountered during the ISR.
- The SL-1 Restant Routine has been modified to perform both a software initialization and an OS warm start. In this manner, we can ensure that system resources are always recovered. There is no net affect to the end-user as a result of this change.

The above fault recovery improvements are defensive in nature. The improvements are intended to provide the system a elegant method to recover from a hardware fault. Any time the system exercises one of these recovery methods, the root cause must be investigated and resolved.

Bug Fixes

Following is a list of known bugs that have been resolved since release 22.33:

NETWORK AUTHORIZATION CODE BV37132

CDR records are incorrect when using network authorization code from an analog (500) set and the authorization code is not re-prompted after the hookswitch flash to make a second call. See the **System Enhancements Section**.

TRUNKS BV44481

At one site, after upgrading from Release 19.22 to Release 21.05, there were BUG0415 (Invalid software trunk state detected. Far-end onhook simulated) and BUG0420 (ORIGTN or TERTN to be idled in Call Register does not match the TN pointed to by ITEMPTN) messages being output, but these were not service affecting.

ACD BV44606

At one site, ACD agents are getting busy tone while trying to log in with their assigned Agent ID indicating that the Agent ID is already in use whereas the fact is the Agent ID is not in use.

CALL PROCESSING BV51019

Intermittently, the switch stops normal call processing and call timers speed up

RECORDED ANNOUNCEMENT BV51472

When a single route is configured with multiple members as PUL or LVL RAN machine types, calls are not queued correctly e.g. each call should be indexed up to the next free TN/Route combination, and hear the appropriate RAN message, or given the correct call processing treatment, e.g. ringback when that RAN machine is busy.

TRAFFIC BV51634

The TFC002 report does not peg all trunks busy (ATB) on incoming ISA service routes.

ELECTRICAL LOW-COST FIBRE BV51792

Loadware development is required for supporting the ELF packet (NT1P63CA). The loadware is changed to support both the EOI and ELF packets.

ISDN BV52217

At one site, an ISDN ISA INWATS call using IDC to a set that is in lockout state forwards to the NIT1 DN when the attendant console is in NIGHT mode instead of the external party receiving busy tone.

ISDN BV52929

When both Q-Sig Supplementary Services Call Completion on Busy (CCBS) and Q-Sig Name Display Services (QNDS), the name display for both sides are not displayed correctly.

VIRTUAL NETWORK SERVICES BV52946

The CDR "N" (normal) record is missing the charges (PPM) when a VNS call is transferred by the attendant.

VIRTUAL NETWORK SERVICES BV52947

The CDR "E" (end) record is missing the charges (PPM) when a VNS call is blind transferred by the attendant and the Release 22 Trunk to Trunk Connection feature is configured.

PRIVACY BV52972

Some sets with privacy (MCRA class of service) are locking up intermittently.

DTI BV53328

At some sites, BUG0105 (Double timeslot problem prevented. TN is printed.) messages are being output when DTI trunks are used.

MIDNIGHT ROUTINES BV54031

The midnight routines took a long time to complete at one site.

ATTENDANT CONSOLE BV54413

The Departmental Listed Directory Number package is equipped, and is being used with auto terminating COT trunks to the LDNs. Each LDN is associated with an attendant console. The ICI key will flash for an incoming call and the attendant cannot access the ICI to answer the incoming call. When BUG250 message is printed out, usually 3 - 4 minutes later, the console is freed up to accept other calls.

DATA DUMP BV54637

When doing a data dump an "INVALID BLOCK LENGTH" appears after "ARIES". This problem only occurs when you build a new system with M2616 sets.

MICROCELLULAR BV54654

When an existing DN is used as an entry for MUD_DN prompt in LD15, system will output SCH1328 (invalid input). SCH1328 has been replaced with SCH242 (directory number conflicts with existing DN) to provide more information to user.

CALL DETAIL RECORDING BV54756

Some CDR records are truncated when they are larger than 128 characters and the baud rate is slow (300).

ISDN BV54770

ISDN PRI channels are going into MBSY state when the active call on the channel is released.

INITIALIZATION BV55506

At one site there is no initialization message output after the sysload is done.

ISDN BV55828

An incoming NI2 call to a set that is CFW all calls to Meridian Mail has an extra progress indicator in the connect message. Both progress indicators of 8 and 2 are present in the connect message. Only progress indicator 2 should be in the connect message.

SCPU COMMAND BV55850/BV59427

When the SCPU (switch cores) command is issued in Overlay 135, the system initializes instead of swapping the two CPU's. This happens when the 68030/68040 processor is in an uninitialized state.

VNS/NACD/RAN/MUSIC BV55928

Calls are NACD with VNS. The source queue has the target queue with a 0 second timer. An ACD call comes into the source queue. The call should get RAN/Music treatment until the alert message is received back on the VNS D-channel. Instead no RAN or Music treatment is given, the call takes 8 - 12 seconds to setup, silence is heard until the alert message is sent from the target switch. Note that this problem only occurs when the originating trunk has DTN class of service.

CONSOLE PRESENTATION GROUP BV56155

An incoming ISA DID call to a vacant number does not get routed to the console group as defined in LD 93.

ESN/NARS BV56289

When ESN/NARS is configured incorrectly, the system can sysload or initialize (INI0005 - CPU fault).

MICROCELLULAR BV56478

When configuring a portable set and key 0 is not configured, if a SCR key is not entered when the portable is first built then the server supplies a incorrect DN. To resolve this problem, SCH0196 (A key 0 DN key

is required on a Mobility set) will be presented to user and user will be reprompted for the SCR key.

NAS BV56540

With NAS activated, an ST system on Release 14 cannot tandem calls to other switches.

MERIDIAN ADMINISTRATION TOOLS BV56613

While attempting to switch from a Core 0 (good IODU) to Core 1 (bad IODU) using MAT 5, the system initialized. When no carrier is present on the ethernet interface, the initialization occurs.

ISDN BV56623

In some cases, there is wrong information on the display of the originator of a call which is forwarded, in the standalone case as well as networkwide on MCDN with RCAP ND3.

MICROCELLULAR BV56812

On systems using distant steering codes and local steering codes between two nodes, visiting portables cannot make or receive calls if the variable length DN is different at the two nodes (e.g. site A uses 4 digits and site B uses 5 digits).

LAPW BV56990

When upgrading to Release 22 with System Access Enhancements, the passwords are encrypted with the login names. If the user uses a TTY to login, the passwords do not match. This problem does not occur with a STA terminal.

CLOCK CONTROLLER BV56992

The Clock Controller cannot synchronize to a default frequency during a cold power start, since there is nothing for the clock controller hardware to track on.

MERIDIAN ADMINISTRATION TOOLS BV57032

For systems with MAT 5.30.5 and later, the short trap 6.5 is not being sent to open managers.

MULTI-PARTY OPERATIONS BV57034

When the call join feature of MPO is used, the set which originally called the set doing call join has its DN key inoperable and incoming calls receive busy tone. To clear the problem the DN key is pressed, but BUG0115 (Terminal does not match DN or TN in call register) message is output. When a conference call is joined to an existing call either a BUG4231 (Procedure SETLAMPSTATE, passed, SSDKEY is greater than 2009, 2112, or 2018 last key.) message is produced for a M2616 set or BUG4231 message and BUG5182 (There is a PRA call reference mismatch affecting the Virtual Network Services Index pointer, run an audit.) message is produced for a M2317 set. This problem is not service affecting.

MULTI-PARTY OPERATIONS BV57238

When the Multi-Party Operations Package is enabled, sometimes there are system initializations or bus errors which may occur.

VIRTUAL NETWORK SERVICES BV57353

If remote call forward on node X is forwarded to an invalid DN over VNS to node Y and Node Y has VNR (vacant number routing) programmed, BUG6013 (RCFW message response timeout. For Attendant RCFW operation, the remote node requires Attendant Network Remote Call Forward package 253.) is printed, causing the facility message to loop around on the VNS D-channel and the remote node to be blocked.

MERIDIAN MAIL BV57542

When a call is transferred to Meridian Mail by using the express messaging and dialing the express messaging access code followed by an autodial key which has the DN of another set and the transfer is completed, double timeslot noise occurs.

BUSY LAMP FIELD ARRAY BV57555

The Busy Lamp Field Array on the M2250 Attendant Console does not have the DN marked busy on it. Instead the empty array is displayed on the BLF screen.

ACD BV57653

A call is presented to an idle ACD agent with call force enabled, FCFT > 0 and ISAP = YES. If the caller disconnects when the agent is still in the FCFT queue, no call abandoned (CAB) message is sent to MAX. This call is also not pegged in the ACD-C reports.

ISDN BV57717

When calls are tandemed from a non Meridian 1 switch over the ISDN T1 Q-Sig GF interface so that the LOC code is used on one Meridian 1 to reach another Meridian 1, the incoming call is rejected from the first Meridian 1.

ISDN BV57718

The calling user sees his/her name displayed for a gateway call originated from a Meridian 1 and going to a non Meridian 1 switch through another Meridian 1.

MAINTENANCE WINDOWS BV57830

When using call trace with release 22.07 from maintenance windows with MAT 5, the system will sysload. This problem does not occur on releases 22.06 or earlier since the stack size on the switch was adequate.

ISA BV57887

At one site, an ISA call to a set with Call Forward All Calls, fails to complete due to the Meridian 1 sending the wrong (unsupported) progress indicator.

CARRIER REMOTE BV58026

With two or more carrier remotes installed, if an initialization occurs (manually or automatically) the switch will take a long time to initialize and cause the idle CPU to disable.

ISDN BV58054

The Meridian 1 Channel ID format is different from a non Meridian 1 switch when a backup D channel is used and the channel ID is implicitly defined (TR1268 NI2 Channel ID format 5ESS). Incoming calls do not complete when the backup channel is active and the incoming call is received on a channel that is on the backup span.

SERVICE CHANGE BV58055

When using Overlay 16 to build NI2 trunks as ISA, service change allows the input of NI2 trunks. ISA is not currently supported on NI2 trunks.

CLOCK CONTROLLER BV58119

The clock controller cannot be enabled after power down/power up of the system. System needs to be initialized for the clock controller to be enabled. See the System Enhancements Section.

MERIDIAN LINK BV58322

There are two transfer call ids in the USM message when a call transfer is completed.

ISDN BV58368

Since upgrading to Release 21.35, a setup message is sent out immediately after the Autodial key is depressed when the called number is equal to the SPN (special number to be screened) in the setup message. This does not allow the user to manually dial digits to complete the call. It appears that the End of Dial timer is not used when a SPN is included in the Autodial key. This problem does not occur when dialing manually.

MICROCELLULAR BV58394

Two portable sets are calling each other simultaneously and double timeslot noise was received instead of

busy tone.

MERIDIAN ADMINISTRATION TOOLS BV58477

When using MAT 5 on Ethernet, the throughput is much slower compared to when doing service change on the TTYs without MAT 5.

MERIDIAN MAIL BV58483

If a hotline key is used to call Meridian Mail, the prime DN is sent in the PCI message instead of the DN assigned to the hotline DN.

MICROCELLULAR BV58512

During an established call on a portable, the portable presses send to transfer the call to another DN, and if the other DN is busy, the caller hears busy tone and the call must press send to transfer 6 to 8 times to return to the first caller.

MERIDIAN LINK BV58548

The call offered message is coming before the progress ringing message. This causes problems with the screen pops.

MERIDIAN LINK BV58564

If the originating DN is a 2-way hotline key, the calling party DN sent to Meridian Link is 0 bytes in length.

MICROCELLULAR BV58652

Portable sets were not set up to handle an inband tone for call waiting tone on key other than call waiting key, therefore portable users are only aware of the first call that is waiting for them.

MERIDIAN LINK BV58904

When the secondary DN makes a call transfer or conference, the Status Change Message THIS PARTY DN IE FIELD contains the primary DN value instead of the secondary DN value.

CONVERSION BV58990

When converting from release 21.43 to release 22.08, conversion fails with a SYS3047 (Automatic conversion is not available for a given data base. Data base on tape is not updated to minimum release.) message.

ADMINISTRATION BV59027

In LD 14, it is not possible to set SIGL = EAM for a DID trunk, if package 190 (UK package) is restricted.

**HANDSFREE/VOLUME CONTROL BV59117/BV59239
BV59179/BV57499**

When using the M2616 set, the handsfree redial does not work, the volume control is inoperable, and there is some delay in the speechpath after answering on an ACD set or SCR call.

MICROCELLULAR BV59212

When a wireline answers a call from another wireline, a twinned portable also answers the call and then disconnects, a BUG6505 (Cref returned by MOB_GET_CREF is invalid) is given. There is no impact to system or call.

MICROCELLULAR LOADWARE BV59243

A defective radio continues to direct calls to it, which effects the system performance.

ISDNBRI BV59342

The TEIs are not being cleared immediately when the terminals were unplugged. The number of TEIs should be decremented within a few seconds after the terminal is unplugged.

ADMINISTRATION BV59406

STAT in LD 54 shows MFC units idle, but STAT in LD 32 shows MFC units MBSY. This problem occurs when the midnight routines are run, the MFC units are put into MBSY and AUD0587 (MF S/R pointing to CR which does not contain its TN. Active Call Register of MF S/R set to nil. TN, CDR information, and progress mark are output.) message is printed out. This problem is not service affecting.

TRACE BV59407

A M2317 set makes a call using an analog ISL trunk to another M2317 set. LD 80 is used to trace the call and BUG5861 (TN passed should be a trunk. Procedure is called with wrong UNITTYPE) is printed. This problem is not service affecting.

AUTOMATIC WAKE-UP BV59465

The background terminal outputs multiple 'EQUF FAIL' messages and the automatic wake-up calls revert back to the operator. This problem only occurs if RANF is configured in a different group from the sets.

AUTHORIZATION CODE BV59548

SCH4599 (The assigned authcode entered is invalid.) message is printed when defining authorization codes for new 500/2500 DN's when package 229 is equipped (Station Specific Authorization Codes). As a work around, the user must step through the programming to the end, when memory is updated and the user goes back and executes a change when the authorization code entries are accepted.

CONVERSION BV59564

When converting to release 22, when sets are configured with keys that utilize the full allocated memory (256 words) the sets get removed from the database.

RETURN TO SAME ATTENDANT BV59742

On a customer with at least 2 attendants with the RTSA prompt set to RSAX, not all calls made by an attendant return to the attendant after the timeout.

MERIDIAN LINK BV59784

The progress message from a hold request on an analog set (500/2500) has the wrong CALLER ID IE.

ACD BV59937

Agents without ACD-D package are not able to configure the ACNT key. SCH3621 (Either ACD package D is not equipped or the agent is not an ICCM acquired control agent.) message is output.

ESN BV59998

BARS will not work with an FCAS (Free Calling Area Screening) when using DISA with DTI. This problem does not occur with analog trunks.

CCR BV60022

An invalid call register in the CCR priority queue for a given CDN on a system with the IVR package configured has produced system initializations when the CCR script has attempted to access the invalid call register.

ISA BV60048

On an ISA DID route when programmed with RCLS (route class marked as internal) = INT, the call is forwarded no answer to the EFD (Flexible Call Forward No Answer DN for external calls) instead of the FDN (Flexible CFNA DN). This problem does not occur for analog DID routes.

CONFERENCE BV60209

Bus errors occur when the originator of an internal three party call disconnects. This problem only occurs if one of the two remaining parties is an analog (500/2500) set with call forward and speed call configured.

ISDN BV60358

A TR1268 NI2 RESTART REJ is sent to a 5ESS NI-2 in backup DCH environment. A RESTART ACK

message should be sent instead, since the 5ESS is attempting to restart on channel 1 on the backup DCH channel.

NACD/CCR BV60598

Run CCR with a script for CDN 2229 to give ringback, queue to 2200, queue to 2999. Create a night table for 2999 so that it call forwards to customer 3. Have all agents busy except for ACD DN 3200. Establish a call between two sets for the same customer. Conference in a customer 3 NACD agent by dialing the CDN 2229. Answer the call at ACD DN 3200. Disconnect the first set. Disconnect the second set. BUG681 message is printed out.

ACD BV60648

At one site, calls are presented to an ACD agent even though the set is in not ready state. The agent had to first put an ISDN or ACD call on hold and keep the handset onhook. If the call is released while the set is still onhook, the NRD lamp starts flashing. After this the problem occurs.

ALARM MANAGEMENT BV60733

After upgrading to Release 22.08 or installing new systems with package 243 (Alarm Filtering) and 296 (MAT) on, some systems will not print maintenance messages. If the site turns package 243 and 295 off the problem no longer occurs.

CCR/NACD BV60887/BV61473

When a QTN (Queue to NACD) call is abandoned, a NOVF message is sent. This NOVF message is in HSL Protocol 10 format (len = 10) instead of HSL Protocol 11 format (len = 14). Also applies to when a QTN call is answered locally. Requires the NACD (Option 178), Queue to NACD (Option 321) and CCR (Option 215) packages.

CCR/NACD BV60891

When a QTN (Queue to NACD) call is abandoned, there is no ICAB or ICCN HSL messages. Requires the NACD (Option 178), Queue to NACD (Option 321) and CCR (Option 215) packages.

CCR/NACD BV60934

When a QTN (Queue to NACD) call is dequeued from the Routing DN, the ICCN message does not have QTN_flag = 1, instead of 0. Requires the NACD (Option 178), Queue to NACD packages (Option 321) and CCR (Option 215) packages.

CCR/NACD BV60936

When a QTN (Queue to NACD) call is dequeued, a NOVF-off HSL message is received but it has the abd_at_src = 1 instead of 0. Requires the NACD (Option 178), Queue to NACD packages (Option 321) and CCR (Option 215) packages.

ADMINISTRATION BV60943

SCH2017 (This value represents a change for the CDR with Outpulsed Digits. The change does not take effect until after the next initialization.) messages are generated continuously after defaulting (carriage return) past the DRNG prompt while programming a new PRI ISA service route in LD 16.

CCR/NACD BV60945

When a QTN (Queue to NACD) call is answered, the RCAA received has the QTN_flag in the wrong bit position, at bit 2 instead of bit 3. Requires the NACD (Option 178), Queue to NACD packages (Option 321) and CCR (Option 215) packages.

CCR/NACD BV61592

When a QTN (Queue to NACD) call is presented to the remote agent, the ICAB HSL message is missing the DNIS information. This only occurs when a QTN call is presented to the remote agent. The DNIS information is there when all agents are busy. Requires the NACD (Option 178), Queue to NACD packages (Option 321) and CCR (Option 215) packages.

MERIDIAN LINK BV61635

There are no second and third USM ringing messages for call forward no answer, second level call forward being sent to Meridian Link.

BASIC RATE INTERFACE BV61780

Sites that have more than one TEI's per Digital Subscriber Loop and upgrades to 22.15 the BRSC cards may not function. All equipped MISP cards are functional.

PRIVATE LINES BV61881

Private lines are not working correctly on EPE when calls are via the CO to an analog Loop Start private line.

ISDNBRI BV62131

Cannot enable the BRIL application on the MISP in LD 32. A BRI824 message is printed with "The MISP failed to get enabled".

ACD BV62139

A call which has time overflowed to the target ACD-DN is not presented to the MQA (Multiple Queue Assignment) agent. Also a CDN (Control DN) call, queued to an ACD-DN is not presented to the MQA agent.

ISDNBRI BV62159

While configuring the BRIE application in LD 27, SCH0101 (Unable to match input fields with stored mnemonics) message is output.

INITIALIZATION BV62345/BV63350

Many RCV0001 messages are being output causing the midnight routines to initialize. This problem was caused by an interaction with Network Message Center and Call Sender.

DATA CALL BV62347

When making a data call from a M2616 set, the call is blocked, and both CPUs lockup. This only occurs when you hit the "program" and "*" keys to release the data call, the switch will lockup with "VECTOR 4D UNIMPLEMENTED" on the CP display.

ADMINISTRATION/MICROCELLULAR BV62393

In LD 20, you are unable to print a music trunk when the Microcellular packages are restricted (Options 302 and 303).

IPE BV62435

There is loss of service to loops running off of fibre-remote multi-ipe and many ERR020's.

MICROCELLULAR BV62476

After upgrading to Release 22, there are SYS9999 and SYS4416 messages printed out for Microcellular which are reserved for Meridian 1 not Microcellular.

MICROCELLULAR BV62488

Microcellular cannot change the DN on a portable with Multi-site. The Multi-site database was not updated when a portable was service changed.

MICROCELLULAR BV62497

When making a call from a portable and hanging up, the DN continues to ring until another call is made to another DN from the portable.

MICROCELLULAR BV62498

If a busy portable set that is configured with call waiting allowed in LD15 hears the call waiting tone and disconnects then BUG0115 (Terminal does not match DN or TN in call register) is generated.

MICROCELLULAR BV62627

When upgrading a system and configuring EICM and MXC, occasionally can not reuse the same card address. If there is a problem with reusing the same card address, user will receive a message that the "Card address - Invalid value: Unconfigured hardware".

SERVICE CHANGE BV62877

Intermittently the system generates SCH6755 (CLID entry D is not allowed to be assigned to all the DN keys on the set.) when adding a new DN on a key to a M 2616 set. (LD 11)

MICROCELLULAR BV63037

Incorrectly idled call registers result in BUG4001s (Call Register idled when SON CR still linked) during midnight routines.

MICROCELLULAR LOADWARE BV63057

The EIMC is causing a memory leak which in turn is causing Microcellular to have no available memory.

MICROCELLULAR LOADWARE BV63059

The Microcellular Traffic in LD 2 for the Operational Measurements is incorrect.

PHANTOM LOOPS BV63065

When LD 17 was run with "PBXH" set, NPR messages were sent for phantom loops causing the system to have an INI-2F. This is because phantom loops have no physical hardware, but NPR messages were still being sent to the hardware.

ACD BV63066

Customers will hear the Recorded Announcement (RAN) then receive fast busy on sites using a VPS card to give the RAN for the ACD queue and that have the ASUP prompt for the RAN route set to NO.

AUTHORIZATION CODE BV63173

When placing a call using AC1+NSCL+ entry, there is a delay prior to receiving request for authorization code. If the user enters additional digits or a pound sign, the dial tone is returned immediately.

MICROCELLULAR BV63181

The protocol version on the neighbor list for an internal cell has version 2 instead of 4. The portable does not work correctly when entering an internal IS-135 RevA cell.

MERIDIAN ADMINISTRATION TOOLS BV63182

Upon initiating a PPP (point-to-point) session from a MAT PC to an Option 81C, the Option 81C's name is changed to "LOCAL_PPP_IF". Even after the PPP session is terminated, the host name remains the same with "LOCAL_PPP_IF".

MERIDIAN LINK BV63535

After upgrading to 22.08, digital sets can not use Make Call in Meridian Link to initiate a call from an idle digital set to another digital set.

CALL PROCESSING BV63565

Console operator extends a call to a user, the call recalls to attendant who tries to extend the call again and periodically the console will lock-up. This problem is random and site unique.

MICROCELLULAR BV63859

Occasionally, on sites running 22.15 software, portable sets lock up when involved in three way call with two portable sets and a wireline phone.

ISDN BV63918

Site has Backup D-channel to DMS250. The backup D-channel is active and primary D-channel is in standby state. A failure on the span carrying the backup D-channel while there is active calls on the B-

channels results in backup D-channel being placed in MBSY state. The primary D-channel does correctly take over in this scenario. This problem only happened with DMS PRI backup.

MICROCELLULAR BV63957

When deleting a cell that has a hand-off path pointing to it, get a CTS bus-error.

MICROCELLULAR BV64069

The watch dog time out for OA&M was set too low which resulted in a restart of OA&M task when debug messages were turned on.

MICROCELLULAR BV64349

On systems with or without the Microcellular packages equipped, a Microcellular debug message is shown during sysload process. This problem is not service effecting.

MICROCELLULAR BV65279

A single call Multiple appearance set up between two sets will have only one call per DN. When a wireline set goes offhook and then the user makes a call using the portable with the same DN, the call register is different than if the wireline is onhook resulting in BUG1333 (Terminal activating Individual-hold is invalid) or BUG0115 (Terminal does not match DN or TN in call register).

SYSTEM BV65428

On systems using a CP2 board with at least 32MB DRAM, after the first warm-start the system may lose 4M of heap space during next warm-start.

MICROCELLULAR LOADWARE BV65747

Portable lockup: when MXC freezes, due to radio failure, due to lack of VCH RF frequencies, and on disabled portable.

LAMP AUDIT BV65810

After upgrading to release 22.33 or later, system will output many BERR0705 and BERR0115 during lamp audit after nulling out (service changing) the ring again key on a M3000 or 2317 type set.

ARIES BV65880

When a new or existing system is loaded with the Aries package for the first time, the Sidetone Objective Loudness Rating (SOLR) prompt under Meridian Modular Telephone Transmission Parameter (ATRN) in LD17 is not initialized/defaulted properly. Sites will have to manually set SOLR to the default value.

ACD BV66647

On release 22.33 and above, ACD agents using 2216 NT2K18xxxx sets will not receive a buzz before call is connected using the call force feature.

MEMORY BV67380

Option 61C CP2 systems with 48 MB of memory only have 1.25 MB available for SL-1 data. Option 61C CP2 systems with more than 1000 call registers configured will have insufficient memory available. This problem has been resolved by increasing the memory available for SL-1 data.

M3000 SETS BV67483

SYS0202 (Station type does not match card type) messages generated and M3000 sets removed when upgrading from 22.15 (22B) or later software to 22.33 (22C) or later. The workaround is to remove the M3000 sets prior to upgrading to 22C.

MULTIPURPOSE SERIAL DATA LINK BV53982

Removing the Multipurpose Serial Data Link board without disabling it first in the software and then re-insert the board immediately results in a system cold start.

MULTIPURPOSE SERIAL DATA LINK BV61122

During cleardown of a Multipurpose Serial Data Link (MSDL)/universal Integrated Services

Digital Network protocol call, the release message is occasionally missing. This problem results in the channel being locked out on the MSDL. However, the channel appears to be idle if viewed using overlay 60.

SYSTEM BV61443

Option 81 system failed to recover from a cold start with a faulty Core to Network Interface (CNI) card installed. System will remain in endless loop of cold starts until the faulty pack is removed.

ADMINISTRATION BV61759/BV65746

After upgrading an Option 81 system to X11 Release 22.08, the system sysloaded when a synchronization was performed on a CMDU (IDU). The SYNC command in overlay 137 does not copy the last sector of each partition that it synchronizes.

SYSTEM BV62346

A Option 81 system's Central Processing Units did not perform an auto recovery when the cards were locked up.

MICROCELLULAR BV62627

When upgrading a system and configuring embedded intelligent mobility processor pack (EIMC) and microcellular transcoder card (MXC), occasionally can not reuse the same card address. If there is a problem with reusing the same card address, user will receive a message that the "Card address - Invalid value: Unconfigured hardware".

MICROCELLULAR LOADWARE BV65275

After locking and unlocking the embedded intelligent mobility processor pack (EIMC) or microcellular transcoder card (MXC) everything seems all right, but calls can not be originated or terminated to or from a portable set. The radio window shows busy-idle state and CTS proclaims "DIGITAL CONTROL LINK SUCCESS". The traffic control radio is still in the "TCC" mode even after all phone calls have ended.

MICROCELLULAR BV64138

When "INVS 11" is used for operational measurements (in overlay 2), the embedded intelligent mobility processor pack (EIMC) information prints out four times per call. Only the first printout has accurate data.

MULTIPURPOSE ISDN SIGNALING PROCESSOR BV66319

Occasionally the Multipurpose ISDN Signaling Processor (MISP) is not enabled during system initialization.

MICROCELLULAR BV66453

Portable set has message waiting allowed. Portable set is on a call when another call comes in on call waiting after second call stops ringing, portable user presses SND twice. Portable set cannot access either call at this point. If the SND is pressed two more times and the original call is ended, the MSP is suspended resulting in portable sets not being able to make or receive calls.

SYSTEM BV66807

Intermittent bus errors while accessing a disabled Core to Network Interface (CNI) port causes switch-over in redundant systems and initializations in single systems.

SYSTEM BV66810

On Option 81 systems, if vxWorks task control data structures are corrupted, then using OS routines during the recovery processing may cause a warm start loop.

SYSTEM BV66881

The first bus error in the interrupt service routine is not properly recognized on Option 81 CP1.

Sales and Marketing Bulletin

Number: CALA-136-MB

Date: November 1997

Upshift Marketing Program

Nortel CALA is pleased to announce the availability of the Upshift marketing program. This program was specially design to help our small pre-Meridian 1 installed base, specifically SL-1 A/M/MS/S/SN/ST & half group N/NT with capacity requirements of between 100 to 300 lines, to upgrade their CPU, software and peripheral equipment at a significantly lower cost than currently available upgrade options. This program offers a refund for selected Existing Peripheral Equipment (EPE) when purchasing an Upshift Option 11 package as a means to upgrade an existing system.

Upshift will be effective from **November 17, 1997 through January 31, 1998.**

This bulletin contains the following information on the "Upshift" program:

- Program Overview
- Packaging/Order Codes/Pricing
- Ordering
- Terms and Conditions
- Equipment Returns
- Forms / Attachments:
 - a) Upshift Product Return Form
 - b) Upshift Refund Worksheet
 - c) Upshift Program Summary
 - d) Upshift - Eligible EPE



Program Overview

This program offers an attractive upgrade option to existing small pre-Meridian 1 systems (specifically SL-1 A/M/MS/S/SN/ST & half group N/NT). Upshift provides a solution which is 40 to 50 percent less costly and it upgrades not only the CPU and software, but also the peripheral equipment. The price savings is recognized by the program participant in two ways. First, through attractively priced system packages and secondly in the form of a refund for returned EPE. The refund will be credited to the Distributor's account after the completion of this marketing program.

An Option 11 Upshift package must be purchase in order to qualify for this program. The Option 11 will need to be of equal or greater capacity (number of line ports and trunk ports) than the system being replaced. By participating in this program Nortel will offer a refund on selected EPE cards of the existing system (see the attached "Upshift - Eligible EPE" list for eligible EPE) . The amounts being offered are \$10 per trunk port and \$5 per line and data port (offer ranges from \$20 to \$80 per EPE card). All replaced EPE must be returned to Nortel in order to receive the credits.

The number of EPE cards that can be returned for a refund will depend on the number of IPE cards purchased. In other words, the number of line and trunk ports returned must be equal to or less than the number of line and trunk ports purchased. A worksheet (Upshift Refund Worksheet) has been provided at the back of this section to help calculate the refund earned.

This program cannot be used in conjunction with any other Marketing Programs unless otherwise stated. MAT 5.6 Common Services and Station Administration may be ordered at no cost with this program.



Packaging / Order Codes / Pricing

Upshift AC Packages & Pricing:

Upshift Order Code	CPC Code	Description	Price
NTVC27AA	A0724647	Meridian 1 Option 11- One Cabinet R22	\$3,480
NTVC28AA	A0724648	Meridian 1 Option 11-Two Cabinets R22	\$8,250
NTVC29AA	A0724649	Meridian 1 Option 11-Three Cabinets R22	\$12,930
NTVC30AA	A0724651	Meridian 1 Option 11- One Cabinet R22 & M.M.	\$8,280
NTVC31AA	A0724652	Meridian 1 Option 11-Two Cabinets R22 & M.M.	\$13,050
NTVC32AA	A0725681	Meridian 1 Option 11-Three Cabinets R22 & M.M.	\$17,730

Upshift DC Packages & Pricing:

Upshift Order Code	CPC Code	Description	Price
NTVC33AA	A0725682	Meridian 1 Option 11- One Cabinet R22	\$3,480
NTVC34AA	A0725683	Meridian 1 Option 11-Two Cabinets R22	\$8,250
NTVC35AA	A0725684	Meridian 1 Option 11-Three Cabinets R22	\$12,930
NTVC36AA	A0725685	Meridian 1 Option 11- One Cabinet R22 & M.M.	\$8,280
NTVC37AA	A0725686	Meridian 1 Option 11-Two Cabinets R22 & M.M.	\$13,050
NTVC38AA	A0725687	Meridian 1 Option 11-Three Cabinets R22 & M.M.	\$17,730



Upshift AC Package Contents:

These packages include Release 22 software with equivalent features as the existing software. Customer wanting to add new features will need to order S/W upgrades at regular list price (see CALA Price Manual - Chapter 4, section A).

NTVC27AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
7	M2616 Modular Telephone - NT2K16XE-35
3	M2808 HF ML Telephone - NT2K08GC-35

NTVC30AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
7	M2616 Modular Telephone - NT2K16XE-35
3	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D

NTVC28AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
1	Option 11C 10 m Exp. Cab. (AC) - NTVC2001
15	M2616 Modular Telephone - NT2K16XE-35
5	M2808 HF ML Telephone - NT2K08GC-35

NTVC31AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
1	Option 11C 10 m Exp. Cab. (AC) - NTVC2001
15	M2616 Modular Telephone - NT2K16XE-35
5	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D

NTVC29AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
2	Option 11C 10 m Exp. Cab. (AC) - NTVC2001
22	M2616 Modular Telephone - NT2K16XE-35
8	M2808 HF ML Telephone - NT2K08GC-35

NTVC32AA

Qty	Description
1	Option 11C Single Cabinet (AC) - QCA7730A
2	Option 11C 10 m Exp. Cab. (AC) - NTVC2001
22	M2616 Modular Telephone - NT2K16XE-35
8	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D



Upshift DC Package Contents:

These packages include Release 22 software with equivalent features as the existing software. Customer wanting to add new features will need to order S/W upgrades at regular list price (see CALA Price Manual - Chapter 4, section A.

NTVC33AA

Qty	Description
1	Option 11C Single Cabinet (DC)-QCA7731A
7	M2616 Modular Telephone - NT2K16XE-35
3	M2808 HF ML Telephone - NT2K08GC-35

NTVC36AA

Qty	Description
1	Option 11C Single Cabinet (DC) - QCA7731A
7	M2616 Modular Telephone - NT2K16XE-35
3	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D

NTVC34AA

Qty	Description
1	Option 11C Single Cabinet (DC) - QCA7731A
1	Option 11C 10 m Exp. Cab. (DC) - NTVC2002
15	M2616 Modular Telephone - NT2K16XE-35
5	M2808 HF ML Telephone - NT2K08GC-35

NTVC37AA

Qty	Description
1	Option 11C Single Cabinet (DC), - QCA7731A
1	Option 11C 10 m Exp. Cab. (DC) - NTVC2002
15	M2616 Modular Telephone - NT2K16XE-35
5	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D

NTVC35AA

Qty	Description
1	Option 11C Single Cabinet (DC) - QCA7731A
2	Option 11C 10 m Exp. Cab. (DC) - NTVC2002
22	M2616 Modular Telephone - NT2K16XE-35
8	M2808 HF ML Telephone - NT2K08GC-35

NTVC38AA

Qty	Description
1	Option 11C Single Cabinet (DC) - QCA7731A
2	Option 11C 10 m Exp. Cab. (DC) - NTVC2002
22	M2616 Modular Telephone - NT2K16XE-35
8	M2808 HF ML Telephone - NT2K08GC-35
1	Meridian Mail 2 ports/ 2 hours - QCA7587D



Ordering

The following information is required to process an order:

1. A Distributor purchase order (P.O.). The P.O. must include the following:
 - a) "Upshift Marketing Program" heading
 - b) One of the Upshift order codes
 - c) The serial number of the existing system
2. A bay face layout of the existing system.
3. Upshift Product Return Form.
4. A "Load 22/Overlay 22" printout of the existing system.

Note: Nortel will provide the Option 11 software that best matches the software of the existing system. No Software Order Forms are required. The information provided in the "Load 22/Overlay 22" printout will be used to determine the software of the new system.

Only one site (upgrade) will be allowed per P.O.

This Information must be faxed to Alex Moreno at (954) 851-8300.

Terms and Conditions

Shipment lead times on orders placed under this program may vary from standard shipment lead times.

All products included on a purchase order utilizing this marketing program must be installed at a single customer location. Discounts are to be used only for equipment sold to end users; they cannot be used to purchase equipment for Distributor inventories. Furthermore, EPE equipment from the Distributor's inventory may not be returned for credit. **Any Violations to the Terms and Conditions of this policy will void any credits earned**



Equipment Returns

The Upshift program requires that the participating Distributor return the replaced Meridian SL-1 hardware as specified in the *Upshift Product Return Form* in order to receive the refund earned. The Distributor is to store all EPE received until the conclusion of this marketing program. Nortel will make arrangements and incur the cost to having the equipment shipped. It is recommended that the distributor wait until receiving the equipment of the last Upshift order before contacting Nortel. **Only one shipment will be accepted per distributor.**

Equipment pick up may be requested by contacting Alex Moreno at the following:

Phone: (954) 858-7039

Fax: (954) 851-8300

e-mail: amoreno@nortel.com

The replaced hardware must be sent to the following address:

Nortel- Materials Recycling
2102 Tobacco Road
Durham, North Carolina, 27704
Attention: CALA "Upshift" Marketing Program

An Equipment Return Packing Slip will be faxed to the Distributor's purchasing agent by Nortel upon receipt of each Upshift purchase order. Returned EPE of each individual order must be bundled together and should include the Equipment Return Packing Slip unique to that order. All bundles (orders) accumulated throughout this marketing program will be shipped as one package in order to minimize shipping costs.

It is the Distributor's responsibility to ensure proper packaging of the replaced Meridian SL-1 equipment. All returned equipment must be packaged adequately to prevent damage to the enclosed components. The Distributor will not receive a refund for any returned equipment that is damaged or otherwise non-reusable.

Nortel will incur the normal and customary cost of shipping the returned equipment to Durham, North Carolina. Nortel will only pay the normal and customary cost of shipping the returned equipment. If the cost is excessive, the distributor will be billed for any charges over the normal and customary cost.

All returned hardware becomes the property of Nortel. All returned equipment must be in working condition.

Returned equipment does not create any form of discount balance for future redemption, and discount eligibility cannot be transferred between customers.

Failure to return the replaced EPE by March 31, 1998 will forfeit any credits earned. Extensions may be requested by contacting Alex Moreno at (954) 858-7039.

Meridian 1 and SL-1 are trademarks of Northern Telecom.





Upshift PRODUCT RETURN FORM

ATTENTION:**THIS FORM MUST ACCOMPANY ALL ORDERS.**

Reference Number:

(Must have both:) Distributor P.O. Number: _____

Switch Serial Number: _____

Customer/Location:

Proposed De-Installation Date: _____

Customer Name: _____

Customer Address: _____

Contact Name: _____

Telephone Number: _____ FAX Number: _____

Distributor Contact:

Name: _____ Phone Number: _____

Company: _____ FAX Number: _____

Product Return Information:

Number of Line Ports: _____ Trunk Ports: _____ Data Ports _____

Refund (\$) Line Ports: _____ Trunk Ports: _____ Data Ports _____

Quantity	Part #	Quantity	Part #

Attach sheets as needed.



End User: _____

P.O. #: _____

**Upshift
Refund Worksheet**

This worksheet is provided to help calculate refund earned.

1 of 2

A. TRUNKS

<u>Part Code</u>	<u>Description</u>	<u>Ports</u> <u>Card</u>	x Qty = Ports
QPC71	2 W E&M/DX sig. & paging trunk, SD, Mu-Law	2	_____
QPC72	Loop signaling TIE/DID/AIOD trunk, , SD, Mu-Law	2	_____
QPC74	Ran trunk, SD, Mu-law	4	_____
QPC217	CO Trunk - mu-Law	2	_____
QPC218	CO/FX trunk, SD, Mu-Law	2	_____
QPC219	CO/FX trunk, SD, Mu-Law	2	_____
QPC237	4W E&M/DX TIE trunk, SD, Mu-Law	2	_____
QPC250	Release link trunk	2	_____
QPC287	2W E&M/DX signaling & paging trunk, SD, A-law	2	_____
QPC288	Loop signaling TIE/DID trunk, SD, A-Law	2	_____
QPC289	Recorded dictation trunk, SD, A-law	2	_____
QPC290	Recorded announcement trunk, SD, A-Law	4	_____
QPC296	4W E&M/DX TIE trunk, SD, A-Law	2	_____
QPC330	Buffered message registration trunk, SD, Mu-Law	2	_____
QPC331	Buffered message registration trunk, SD, A-Law	2	_____
QPC391	Pulsed E&M trunk, SD, Mu-Law	2	_____
QPC449	Loop signaling TIE/DIDtrunk, DD, Mu-Law	4	_____
QPC450	CO Trunk/FX trunk, DD, Mu-Law	4	_____
QPC525	CO/PPM trunk, DD, Mu-Law	4	_____
QPC526	CO/PPM trunk, DD, A-Law	4	_____
QPC527	CO/FX trunk, DD, A-Law	4	_____
QPC559	Loop signaling TIE/DID trunk, DD, A-Law	4	_____

Total Trunk Ports: _____

B. DATA

<u>Part Code</u>	<u>Description</u>	<u>Ports</u> <u>Card</u>	x Qty = Ports
QPC311	500/2500 line card, SD, Mu-Law	4	_____
QPC341	SL-1 line card, SD, Mu-Law	4	_____
QPC432	500/2500 off premise line card, SD, Mu-Law	4	_____

Total Trunk Ports: _____



End User: _____

P.O. #: _____

**Upshift
Refund Worksheet**

This worksheet is provided to help calculate refund earned.

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C. LINES

<u>Part Code</u>	<u>Description</u>	<u>Ports</u> <u>Card</u>	<u>x Qty = Ports</u>
QPC60	500/2500 line card, SD, Mu-Law	4	_____
QPC61	SL-1 line card, SD, Mu-Law	4	_____
QPC192	500/2500 off premise line card, SD, Mu-Law	4	_____
QPC267	500/2500 message waiting line card, SD, Mu-Law	4	_____
QPC286	500/2500 message waiting line card, SD, A-Law	4	_____
QPC292	500/2500 off premise extension, SD, A-Law	4	_____
QPC297	Supervisory SL-1 line, console + power, SD, Mu-Law	4	_____
QPC302	Ground button line card, SD, Mu-Law	4	_____
QPC342	Supervisory SL-1 line, console + power, SD, A-Law	4	_____
QPC343	Ground button line card, SD, A-Law	4	_____
QPC451	SL-1 line/console card, DD, Mu-Law	8	_____
QPC452	500/2500 line, DD, Mu-Law	8	_____
QPC494	500/2500 message waiting line, DD, Mu-Law	8	_____
QPC520	SL-1 line/console, DD, A-Law	8	_____
QPC521	500/2500 line card, DD, A-Law	8	_____
QPC532	Ground button recall line card, DD, A-Law	8	_____
QPC558	500/2500 msg waiting line card, DD, A-Law	8	_____
QPC578	Integrated services digital line card, A-Law/Mu-Law	8	_____
QPC594	500/2500 line card, QD, Mu-Law	16	_____
QPC682	500/2500 message waiting line card, DD, A-Law	8	_____
QPC695	500/2500 line for QPC594 motherboard, QD, A-Law	16	_____
QPC729	500/2500 line, QD, A-Law	16	_____
QPC745	Calib. ground button line motherboard, QD, A-Law	16	_____
QPC789	500/2500 message waiting line, QD, Mu-law	16	_____
QPC936	500/2500 message waiting line, QD, A-law	16	_____

Total Line Ports: _____

D. REFUND EARNED

	<u>Total ports</u>	<u>X</u>	<u>\$/Port</u>	<u>=</u>	<u>Total Port Refund</u>
Line Port Refund:	_____	X	\$5.00	=	_____
Data Port Refund:	_____	X	\$5.00	=	_____
Trunk Port Refund:	_____	X	\$10.00	=	_____

Total Refund Earned: _____

Upshift PROGRAM SUMMARY



Upshift - Eligible EPE

1 of 3

The following is a list of EPE that may be returned for a refund. **EPE not in this list are not eligible for refunds.**

These tables can also be used to determine the following:

- The number of ports per EPE cards
- IPE replacement and order code
- Refund per card

Analog Trunk Cards:

EPE			IPE Replacement	
Eng. Code	Ports	Refund	Eng. Code	IPE Description
QPC71	2	\$ 20	NT8D14BB	Universal trunk (8 Ports): For paging
			NT8D15AK	4W E&M trunk Card: For E&M/DX signaling
QPC72	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC74	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC217	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC218	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC219	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC237	2	\$ 20	NT8D15AK	4W E&M trunk Card, XEM (4 ports)
QPC250	2	\$ 20	NT8D15AK	4W E&M trunk (4 ports): For Remote
			NT8D14BB	Universal Trunk (8 ports): For Main
QPC287	2	\$ 20	NT8D14BB	Universal trunk (8 ports): For paging
			NT8D15AK	4W E&M trunk: For E&M/DX signaling
QPC288	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC289	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC290	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC296	2	\$ 20	NT8D15AK	4W E&M trunk Card, XEM (4 ports)
QPC330	2	\$ 20	NTCK16AE	XFCOT with PPM (8 ports)
QPC331	2	\$ 20	NTCK16AE	XFCOT with PPM (8 ports)
QPC391	2	\$ 20	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC449	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC450	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC525	4	\$ 40	NTCK16AE	XFCOT with PPM (8 ports)
QPC526	4	\$ 40	NTCK16AE	XFCOT with PPM (8 ports)
QPC527	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)
QPC559	4	\$ 40	NT8D14BB	Universal Trunk Card, XUT (8 ports)



Upshift - Eligible EPE

2 of 3

Line Cards:

EPE			IPE Replacement	
Eng. Code	Ports	Refund	Eng. Code	IPE Description
QPC60	4	\$ 20	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC61	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC192	4	\$ 20	NT1R20AB	Off premise station line card (8 ports)
QPC267	4	\$ 20	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC286	4	\$ 20	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC292	4	\$ 20	NT1R20AB	Off premise station line card (8 ports)
QPC297	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC302	4	\$ 20	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC342	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC343	4	\$ 20	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC451	8	\$ 40	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC452	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC494	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC520	8	\$ 40	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC521	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC532	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)



Upshift - Eligible EPE

Line Cards (Continued):

EPE			IPE Replacement	
Eng. Code	Ports	Refund	Eng. Code	IPE Description
QPC558	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC578	8	\$ 40	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC594	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC682	8	\$ 40	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC695	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC729	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC745	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC789	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC936	16	\$ 80	NT8D09AK	Message waiting line card, (16 ports)
			NT8D02EA	Digital line card (16 voice & 16 data ports)

Data Trunk Cards:

EPE			IPE Replacement	
Eng. Code	Ports	Refund	Eng. Code	IPE Description
QPC311	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC341	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)
QPC432	4	\$ 20	NT8D02EA	Digital line card (16 voice & 16 data ports)

NOTE: Equipment subject to change due to product retirement and new product introduction.

Nortel CALA Inc.
1500 Concord Terrace
Sunrise, Florida 33323
Teléfono: (305) 851-8000
Fax: (954) 851-8818
Attn: Comunicaciones

NORTEL
NORTHERN TELECOM

“Boletines de Marketing” Cambio de Dirección y Comentarios

Nueva subscripción ☐

Cambio de dirección/título ☐

Por favor especifique el producto:

☐ Companion

☐ Magellan

☐ Meridian 1

☐ Norstar

☐ Por favor marque
aquí si Ud. es nuestro
cliente para Magellan

☐ Telsets

Conmutación:

☐ Norte América

☐ Internacional

Transmisión:

☐ ANSI

☐ ETSI

Nombre: _____

Título: _____

Compañía: _____

Dirección: _____

Ciudad, País: _____

Tel/Fax: _____

Comentarios: _____

MANTENGASE CONECTADO

Para asegurarse que reciba los Boletines de Nortel durante los siguientes meses, favor verifique su dirección y haga cualquier cambio necesario.

Si su información está correcta, puede utilizar este formulario para añadir el nombre de algún colega que quiera recibir futuros boletines.

**Por Favor, Tome
Nota del Cambio de
Número de Fax**

Envíe este formulario al fax (954)851-8818, atención, Claudia Joannou, en el Dept. de Comunicaciones.



NORTEL
NORTHERN TELECOM

Sales and Marketing Bulletin

Number: CALA-139-MB
Date: October 1997

Nortel CALA is pleased to inform of the availability of a product manufactured by a member of the Nortel's Business Affiliate program, which enhances the capabilities of the Norstar platform by allowing the digital station modules of the Modular ICS and 8x24 to be located up to 3 kilometers from the KSU.

Introduction

Digital Techniques Inc. announces the availability of the *Module Extender for Norstar*. This device is designed for the Norstar Modular ICS or Norstar Modular 8X24 and permits the remote placement of modules and applications at distances up to 3 kilometers or 1.9 miles from the KSU, through long fiber connections.

Product Responsibility

Digital Techniques Inc. is solely responsible for the design, manufacture, marketing, sale, distribution, support, and warranty of the Module Extender for Norstar.

Market Positioning

The Module Extender for Norstar should be positioned as an enhancement to Norstar customers that provides the capability to extend the reach of the core Norstar installation to remote locations. The Module Extender for Norstar has a number of possible applications including:

OPX Expansion: The Module Extender for Norstar permits up to 10 Fiber Station Modules to be placed in different locations at distances up to 3 kilometers from the Norstar core installation effectively tying together several branch locations into a single "Virtual Norstar" with all the benefits of full integration of core functions, applications and peripherals.

Multiple Dedicated Applications: In departmental environments, customers can share core Norstar KSU resources while still allowing departments full control over ACD or Norstar Voice Mail applications.

Campus Companion Installations: In campus environments with several buildings in proximity to one another, Companion can be configured to provide full access to personnel as they move around the facility.

Multiple Tenant Applications: The Module Extender for Norstar permits several customers in a mall or office complex environment to share the benefits of a Norstar system among their locations.

Product Description

Package Contents

The DTI Module Extender for Norstar, model number "MODEXT" includes the following components:

- One (1) Local Module Extender with power supply;
- One (1) Remote Module Extender with power supply;
- One (1) 2.1 m short fiber cable with fiber cable plugs on either end, mounted on a Norstar fiber cable spool;
- Eight (8) mounting screws
- One (1) English installation and user guide which includes a wall-mount template.

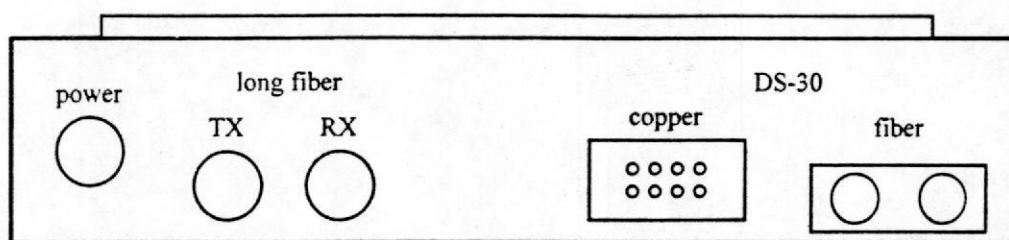
Customer Application - DTI Module Extender for Norstar

Page 1 of 4

Module Extender Units

The Module Extender units are dolphin gray and measure 7.75" x 4.25" x 1.5" (19.7 cm x 10.8 cm x 3.8 cm). They are labeled "DTI Module Extender - Local KSU Unit" and "DTI Module Extender - Remote Module Unit". Two LEDs for troubleshooting are mounted on the front of each unit and are labeled "DS-30" and "Long Fiber". The Modules may be desk or wall-mounted.

The back of the Local KSU Unit is shown below:



Connectors are provided as follows:

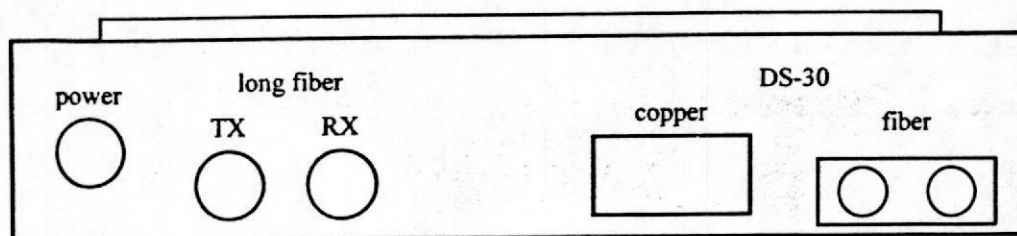
Power: Accepts the female receptacle of the provided power supply

Long Fiber TX and RX: Accepts the male connectors to the long fiber run between the KSU and module

DS-30 Copper: Accepts a Norstar DS-30 copper connector (for use with Modular 8X24, or the Modular ICS)

DS-30 Fiber: Accepts a Norstar DS-30 fiber connector (for use with Modular ICS)

The back for the Remote Module Unit is shown below:



The connectors provided are identical to the Local KSU Unit with the exception that no DS-30 Copper connector is provided.

KSU Interface

The Module Extender for Norstar may be connected to a Norstar KSU as follows:

Norstar KSU Type	Expansion Card Type	Expansion Card Part Number	Module Extender DS-30 Connection
Modular ICS	Mod ICS Fiber 2 Port	A0404244	Fiber
Modular ICS	Mod ICS Fiber 6 Port	A0404245	Fiber
Modular ICS	Combo Fiber 6 Port Svc	A0632426	Fiber
Modular ICS	Mod ICS Copper 2 Port	A0405796	Copper
Modular ICS	Mod ICS Copper 6 Port	A0405797	Copper
Modular 8X24	2 Port Copper	A0338794	Copper
Modular 8X24	6 Port Copper	A0338796	Copper

System Capacities

The System Capacities for Module Extenders are as follows:

Norstar KSU Type	Software Load	Capacity of Module Extenders
Modular ICS	NA-MICS	6
Modular ICS	MICS - XC	10 + 2 Companion
Modular 8X24	Any	6

Product Specifications

Power	Voltage Current Consumption Plug Type / Size	12 V ac 600 mA 10 watts max Barrel / 2.1 mm
Distance	Max Distance from KSU Max Distance from Module	6 Feet (2 meters) 6 Feet (2 meters)
Environment	Temperature Relative Humidity	0 to 50 degrees C 5% to 95% non-condensing

Maximum Long Fiber Loop Length

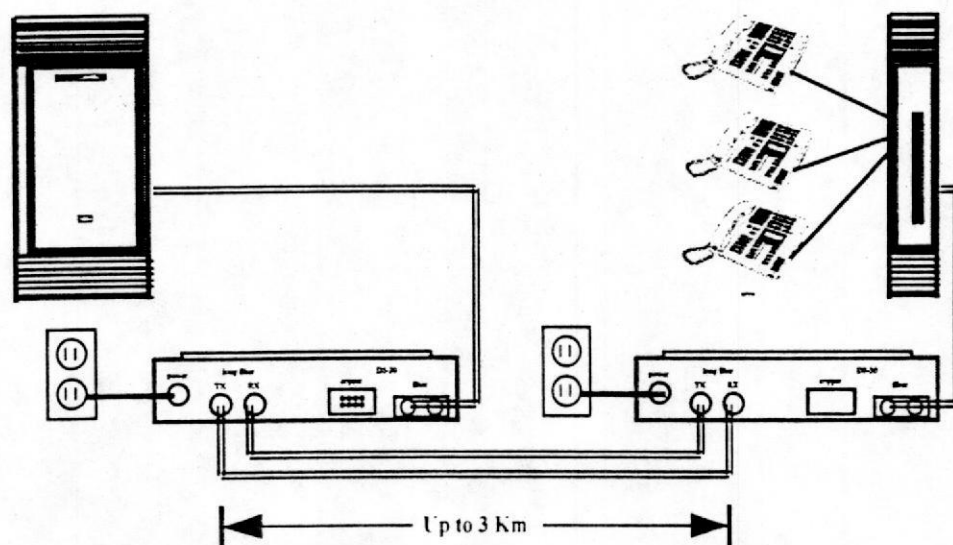
The maximum length of the fiber loop extending between the Local KSU unit and the remote module unit is dependent on the quality of the fiber optic cable employed. The signal attenuation between the two modules must not exceed 12 dB. The following formula may be used to determine the maximum loop length:

$$\frac{12 \text{ dB maximum signal attenuation}}{\text{Fiber cable attenuation (dB/km)}} = \text{Max Distance between Modules in km}$$

Module Extender Installation

The following procedure should be used to install the Module Extenders:

1. Ensure that the units are in the correct location:
 - The Local Module Extender is placed next to the KSU
 - The Remote Module Extender is placed next to the Station Module at the remote location;
2. Attach the provided adhesive bumper feet to the bottom of the Extender Unit in the four guides;
3. If the Extender units are to be wall mounted, use the wall mount template and screws provided;
4. Connect the cable and wires as shown below:



Technical Support, Training, Promotion, Warranty and Repair, and Ordering Information

For further information on DTI's Module Extender for Norstar including information concerning technical support, training, promotion, warranty and repair and price / ordering information, please contact:

Dan Ptak
Product Manager
Digital Techniques, Inc.
(972) 390-6202
(972) 727-4243 (FAX)
danptak@dtchs.com

or visit DTI's web site at:

www.digitaltechniques.com

If you have any questions or comments, or require further information, please contact the Norstar CALA group:

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A World of Networks

Product Bulletin

Number: CALA-081-PB

Date: October, 1997

Nortel CALA Inc., Meridian 1 Core Product Support Policy Update

Nortel CALA Inc., has updated its product support policy for Meridian 1 Core products. This update, effective November 1, 1997, supercedes previous updates, including copies of the policy located in other Nortel documents (i.e. Nortel CALA ENS Price Manual, Nortel CALA Distributor Procedures Manual etc.).

The products impacted by this support policy are:

- Meridian SL-1 and Meridian 1 families of PBX systems
- Generic X08, X37 and X11 software
- System Management Tool, Meridian Administration Terminal (MAT)

We advise you to review this policy carefully and use it to determine your support status. Other Nortel products may have support plans which are different from the plan described here. Please contact your Nortel representative to obtain details about their respective plans.

This support policy is specifically defined and applicable only to Nortel's Caribbean and Latin American (CALA) market, which includes Mexico, Caribbean (including Bermuda), Central America and South America.

Global Account customers are asked to refer to their Nortel Global Account Manager to obtain support plan information for sites located outside of the Nortel CALA region.

This policy will be included in the next upissue of the Nortel CALA MCS price manual, and will also be incorporated into the Nortel CALA Distributor Procedures Manual.

Nortel CALA Inc., reserves the right to change any part of this policy at any time.

Meridian 1 Core Product Support Policy

Effective November 1, 1997

Table of Contents

Section 1:	Introduction and General Information
1.1	What is a product support policy (plan)
1.2	Objectives
1.3	Applicable products and region
1.4	Year 2000 impact
1.5	How to use the support plan
 Section 2:	 Meridian 1 Hardware and Software Support Plan
2.1	Support phases
2.2	Meridian 1 Hardware Support Plan
2.3	Meridian-1 Software Support Plan
 Section 3:	 Meridian Administration Tool Software Support Plan
3.1	Introduction
3.2	MAT Software Support Plan
3.3	MAT Hardware Support Plan
 Section 4:	 Nortel's Meridian 1 Right-To-Use Policy

Section 1

Introduction and General Information

1.1 WHAT IS A PRODUCT SUPPORT POLICY ?

A product support policy is a plan that identifies the level of support provided for a given set of products and services. Product support policies exist to account for technological advancements and changes in law, regulation, manufacturing and new customer requirements.

1.2 OBJECTIVES

Nortel's product support plan is designed to meet the following objectives:

- To inform of existing products, their service support and retirement plan.
- To inform of new product introduction and the impact of service support.
- To minimize product operating costs.
- To optimize service capabilities.
- To use as a guide for managing employee training requirements/strategies.

Nortel's product support policy provides information to assist our customers with their capital budget planning. This ensures our customers maintain the optimum level of service for their investment.

1.3 APPLICABLE PRODUCTS and REGION

The products impacted by this policy are:

- Meridian SL-1 and Meridian 1 families of PBX systems
- Generic X08, X37 and X11 software
- System Management Tool, Meridian Administration Tool (MAT)

If you use all of these products you should complete all sections of this policy to determine your overall support status.

This support policy is specifically defined and applicable only for Nortel's Caribbean and Latin American (CALA) market, which includes Mexico, Caribbean, Central America and South America.

Global Account customers are asked to refer to their Nortel Global Account Manager to obtain support plan information for sites located outside of the Nortel CALA region.

Nortel CALA Inc. reserves the right to change any part of this policy at any time.

1.4 YEAR 2000 IMPACT

This policy now factors in the Year 2000 impact for the CALA region. Please refer to product bulletin CALA-080-PB for details about the Year 2000 and its impact on the Meridian 1 portfolio of products offered in the CALA region.

1.5 HOW TO USE THE SUPPORT PLAN

1. Read Section 2 in its entirety.
2. Identify the PBX hardware platform and the release of software that you are using today.
3. **HARDWARE SUPPORT STATUS:** Reference Section 2.2.1 and Table 3 to identify the support status of your hardware. Reference Section 2.1.1 and Table 1 to identify what products and services are available to you based on the status identified.
4. **SOFTWARE SUPPORT STATUS:** Reference Section 2.3.1 and either Table 6 or 7 to identify the support status of your software. Reference Section 2.1.2 and Table 2 to identify what products and services are available to you based on the status identified.
5. If necessary, review sections 2.2.2 and 2.2.3 to determine any hardware breakpoints and evergreen paths available to you.
6. If you also use the MAT product, read and complete Section 3.

Section 2

MERIDIAN 1 Hardware and Software Support Plan

2.1 SUPPORT PHASES

Nortel's product support plan for Meridian 1 core hardware and software products has four phases:

Phase 1	CURRENT	(C)
Phase 2	ACTIVE	(A)
Phase 3	SUSTAINED	(S)
Phase 4	RETIRED	(R)

Each phase offers different levels of product and service support, as described in the tables that follow. As new products are introduced, support and service for existing products move to a new phase (phase down), to fewer and fewer offerings, until finally retirement is reached. Upon retirement, features and support services are no longer available.

There are different services available for each of the hardware and software phases. The next two sections identify the various phases and what services are offered. Y - yes, feature/service is available. N - no, feature/service is not available. Limited - feature/service may be available in certain circumstances, refer to notes below the table for more information.

2.1.1 MERIDIAN 1 HARDWARE SUPPORT PHASES

Table 1 lists each of the HARDWARE phases and defines what products and services are available.

Table 1: Hardware Support Phases

	CURRENT	ACTIVE	SUSTAINED	RETIRED
New Systems	Y	N	N	N
New Products (i.e. MICB, MIRAN etc.)	Y	Y	Y	Limited (1)
For Options 21 - 81, upgrades to.....	Y	N	N	N
For Option 11, upgrades to...	Y	N	N	N
Expansions (i.e. memory, ports, trunks etc.)	Y	Y	Y	N
TAS Support	Y	Y	Limited (2)	Limited (3)
Hardware Repair and Returns	Y	Y	Limited (4)	N
Recycling and vintage changes	Y	Y	Y	N
User Guides	Y	Y	Y	N
NTPs	Y	Y	Limited (5)	N

Notes:

1. Some new products may not be compatible with older hardware platforms. You may need to upgrade your hardware to support the new product.
2. Support may be limited to latest product issue only. Upissued hardware is provided if problem has known fix developed.
3. Problem diagnosis only.
4. Repair and returns may be available - billable to customer. No like-for-like replacements are available.
5. Subject to print release being available.

2.1.2 MERIDIAN 1 SOFTWARE SUPPORT PHASES

Table 2 lists each of the SOFTWARE phases and defines what products and services are available.

Table 2: Software Support Phases

	CURRENT	ACTIVE	SUSTAINED	RETIRED
New Software	Y	N	N	N
Upissues	Y	Y	Y	N
For Options 21 - 81, additional features	Y	Y	N	N
For Option 11, additional features	Y	Y	N	N
Bug fixes	Y	Y	N	N
TAS Support	Y	Y	Y	N
Replacement tapes, diskettes and CD-ROMs	Y	Y	Y	Limited (1)
User Guides	Y	Y	Y	N
NTPs	Y	Y	Limited (2)	N

Notes:

1. Replacement tapes/diskettes/CD-ROMs will be provided if available. No new packages can be incorporated into replacement tapes/diskettes/CD-ROMs.
2. Subject to print release being available.

2.2 MERIDIAN 1 HARDWARE SUPPORT PLAN

2.2.1 HARDWARE SUPPORT STATUS

Table 3 identifies each of the machine types that have been introduced by Nortel CALA Inc., and their support status (refer to section 2.1.1 for description of the hardware support status definitions). Nortel CALA Inc., will make available at current prices, functionally equivalent repair/replacement hardware, for a period of **five years** from the date we manufacture discontinue and/or supercede a particular release of Nortel hardware.

For example: You purchased and installed an Option 11E system in 1995. Option 11C was introduced in October 1996, which means the Option 11E has now been superceded by new hardware. Nortel CALA Inc., will continue to support your Option 11E system for a period of five more years, starting when the Option 11C was introduced - October 1996 until October 2001. Your Option 11E system will then be retired on October 1, 2001. To continue receiving support beyond October 1, 2001 you will need to upgrade your Option 11E to an Option 11C or other system that becomes available in the future.

Table 3: Hardware Support Status

CURRENT	ACTIVE	SUSTAINED	RETIRED
11C	11E	11	L
51C	21E	21	VL
61C	51	ST	VLE
81	61		A
81C	71		AE
	STE		XL
	RT		M
	NT		S
	XT		MS
			N
			XN

Notes:

1. All current systems are sold with the CP2 (68040) processor.
2. Table 3 indicates the hardware platforms that were officially introduced into the CALA region. Other regions may have introduced additional platforms, but they are NOT supported in CALA.
3. Hardware goes into active status when the next comparable platform is introduced (i.e. small system, large system).
4. The active interval is the start of the 5 year support limit. The retired status is the end of the 5 year support limit and occurs on the first of the month, 5 years after the start of active status. The Sustained status begins at the beginning of the 4th year (one year prior to the retirement date). The duration of the current and active status will vary.
5. Introductions of new circuit packs, cables, modules, telsets, peripherals, etc. do not change the active and subsequent status dates for a particular system, or the 5 year support timeline.
6. Technological developments, competitive environment and other business factors may impact the introduction of new hardware and the subsequent schedule for the support policy. Nortel reserves the right to change this policy at any time for any reason.

2.2.2 HARDWARE BREAKPOINTS

A hardware breakpoint is defined as the point where new hardware is required in order to support the next level of software. Knowing what hardware breakpoints you face will help you in planning your upgrade strategy.

Table 4a: Hardware Breakpoints

	14	15	16	18	20	21	22
M1 Large Systems	H	W	H	W		H	W
Option 11, 11E, 11C				H	W	H	W
					11E		11C

Table 4b: Hardware Breakpoints for Puerto Rico, Virgin Islands and Bermuda

	14	15	16	17	18	19	20	21	22
Puerto Rico, Virgin Islands and Bermuda									
M1 Large Systems	H	W		H	W			H	W
Option 11, 11E, 11C							H	W	H
							11E		11C

2.2.3 HARDWARE EVERGREEN PATH

The following identifies the evergreen paths for each of the four Meridian 1 / SL-1 family of PBX systems. For each family, the type of PBX is noted on the top and the year it was introduced is noted underneath. Use this chart to identify what evolution path you can take with the system you are using today.

Table 5: Meridian 1 / SL-1 PBX Evergreen Path

Option 11.....	Option 11E.....	Option 11C							
1991	1995	1996							
A.....M.....MS.....S.....ST.....RT.....	Option 21.....	Option 51							
1979 1982 1984 1984 1987 1988 1990		1990							
L.....LE.....N.....NT.....	Option 61								
1975 1977 1984 1986 1990									
VL.....VL.....XL.....XT.....	Option 71.....	Option 81							
1976 1980 1984 1986 1990		1993							

2.2.4 HARDWARE WARRANTY

New hardware: fifteen months. This includes a three month period from date of shipment, plus a one year general warranty.

Repaired hardware: 90 days from date of shipment.

2.3 MERIDIAN 1 SOFTWARE SUPPORT PLAN

2.3.1 SOFTWARE SUPPORT STATUS

Make sure you have read and understood sections 2.1 - 2.2 before continuing with this section.

Tables 6 and 7 identify each of the software releases that have been introduced by Nortel CALA Inc. and their support status. Table 6 is for large systems (Options 21-81) and Table 7 is for small systems (Option 11). (Refer to section 2.1.2 for description of the software support status definitions).

Nortel CALA Inc., will make available at current prices, functionally equivalent repair/replacement software, for a period of **five years** from the date we discontinue and/or supercede a particular release of Nortel software.

For example: You purchased and installed Release 21 software in February 1996. Release 22 software was introduced in October 1996, which means the Release 21 software has now been superseded by new software. Nortel CALA Inc., will continue to support your Release 21 software for a period of five more years from when the Release 22 software was introduced - October 1996 until October 2001. Your Release 21 software will then be retired on October 1, 2001. To continue receiving support beyond October 1, 2001 you will need to upgrade your Release 21 software to a higher level of software (refer to support matrix to determine the appropriate software required).

Notes for Tables 6, 7, and 8:

1. Tables 6 and 7 indicate the software releases and their given upissues that were officially introduced into the CALA region. Only these releases are supported in CALA. Other Nortel regions may have introduced additional software releases, but they are NOT supported in CALA.
2. The first column in these tables 6 and 7 contains the upissue in **BOLD** as the most current version of a given release and is the one delivered when an order for that level of software is requested. Note that the initial release generic is parenthesized in the first column with the initial release date to the left.
3. * 21.44 and 21.45 are on controlled release.
4. ** 22C is not yet available (Market release will be 4Q98). ** 21G is not yet available (Market release date has not yet been determined).
5. Software goes into active status when the FIRST issue of the next release is introduced.
6. The active interval is the start of the 5 year support limit. The retired status is the end of the 5 year support limit and occurs on the first of the month, 5 years after the start of active status. The Sustained status begins at the beginning of the 4th year (one year prior to the retirement date). The duration of the current and active status will vary.
7. Upissues of a release do not change the active and subsequent status dates, or the 5 year support timeline.
8. Technological developments, competitive environment and other business factors may impact the introduction of new software and the subsequent schedule for the support policy. Nortel reserves the right to change this policy at any time for any reason

Table 6: Large Systems: Software Support Status

RELEASE	CURRENT	ACTIVE	SUSTAINED	Entire Release RETIRES ON...
22.08 (10/96)				TBD
22.16	Yes			
22.C **				
21.23 (2/96)				Oct 1. 2001
21.31				
21.35		Yes		
21.44 *				
21.45 *				
21 G **				
20.06 (5/94)				Feb 1. 2001
20.19				
20.22				
20.32			Yes	
18.20 (5/93)				Mav 1. 1999
18.41				
18.44			Yes	
16.65 (5/91)				Mav 1. 1998
16.67				
16. 86				
16. 87				
16. 90				
16. 91				
16.92			Yes	
All remaining software is retired				

Table 7: Small Systems: Software Support Status

RELEASE	CURRENT	ACTIVE	SUSTAINED	Entire Release RETIRES ON...
22.08 (10/96)				TBD
22.16	Yes			
22.C **				
21.23 (2/96)				Oct 1. 2001
21.31				
21.35		Yes		
21.44 *				
21.45 *				
21 G **				
20.06 (5/94)				Feb 1. 2001
20.19				
20.22				
20.32			Yes	
18.20 (5/93)				May 1. 1999
18.41				
18.44			Yes	
16.65 (5/91)				May 1. 1998
16.67				
16.86				
16.87				
16.90				
16.91				
16.92			Yes	
All remaining software is retired				

2.3.1.1 PUERTO RICO - SOFTWARE SUPPORT STATUS

In Puerto Rico, two additional releases of software were made available, X11 Releases 19 and 17. The following table indicates the support status for these additional releases. All other software made available to Puerto Rico is the same as elsewhere in the CALA region - refer to Tables 6 and 7 for details.

Table 8: Software Support Status - Puerto Rico

RELEASE	CURRENT	ACTIVE	SUSTAINED	TO RETIRE ON...
19.12 19.17			Yes	May 1, 1999
17.60 17.61/65/66/67 /69/70/71/72			Yes	May 1, 1998

2.3.2 SOFTWARE WARRANTY

Meridian 1 software is warranted to enable the purchased features to be used as described in the relevant documentation as of the date of delivery.

Inability to use the purchased features because of software problems must be reported to CTAS within the applicable warranty period to qualify for resolution free of charge under the warranty provision.

Problems with emergency and service affecting situations which are reported to CTAS on systems under warranty or enrolled in the Service Support Plan, will be resolved free of charge by a software fix. When a new version of software is required, the software will be shipped without the need for a customer purchase order.

Problems addressed by means of an available software patch, which can be retained within the system via Patchsave, shall be considered resolved. No new version of software will be issued.

Outside a system warranty, a new release or issue of software to resolve a problem is billable.

Software Supplied For	Generic/Release	Issue	Warranty
New System	Current	Current	1 year
System Conversion	Current	Current	90 days
Feature Addition	Current/Active	Current	90 days
	Sustained	Current	90 days
Software Upgrade	Current/Active	Current	90 days
Replacement Tape	Installed (C,A,S,R)	Current	90 days

Notes:

1. All replacement software tapes/diskettes will be invoiced at the current list price (non-discountable). A credit will be issued for tapes ordered and returned in accordance with the Tape Cartridge Warranty provisions.
2. If a full complement of tapes or diskettes are ordered for a system, the current issue of the installed software will be supplied at no extra charge. If less than a full complement of tapes or diskettes are ordered, the existing issue installed on the system will be supplied. A full complement consists of 3 sets of tapes/diskettes and data cartridge(s) as required.

Section 3

MERIDIAN Administration Tool Software Support Plan

3.1 INTRODUCTION

If you are using the Meridian Administration Tool (MAT) to manage your Meridian SL-1/Meridian 1 PBX, you should also assess the support strategy for this product. It is important to make sure you have assessed the support status for your Meridian 1 hardware and software BEFORE proceeding with this section. Return to section 2 and complete it before continuing here.

3.2 MAT SOFTWARE SUPPORT PLAN

3.2.1 MAT SOFTWARE SUPPORT PHASES

Nortel's product support plan for MAT software has only two phases:

Phase 1 CURRENT

Phase 2 RETIRED

Each phase offers different levels of product and service support, as described in the table that follows. As new products are introduced, support and service for existing products move to the retired phase. Table 8 defines each phase, and lists what products and services are available.

Table 8: MAT Software Support Phases and their Product/Service Offerings

	CURRENT	RETIRED
New Software	Y	N
Upgrades	Y	Limited (1)
Software fixes	Limited (2)	N
TAS Support	Y	N
User Guides	Y	Limited (3)
NTPs	Y	Limited (3)

Notes:

1. Must upgrade to current software release.
2. Software fixes offered where possible. May be asked to upgrade to current release (at Nortel's expense) to obtain fix.
3. Subject to print release being available.

3.2.2 MAT SOFTWARE SUPPORT POLICY

Table 9 identifies each level of MAT software that has been introduced into the CALA region, and its support status. Refer to Table 8 for details on what products/services are provided with each status.

Table 9: MAT Software Availability and Support Status

Software Release	X11 S/W Compatibility	Availability in CALA	Status	Comments
Rls 3.02	Rls 14.47, 16.97G, 18.42H, and 20.	Nov. 1995	Retired	
Rls 3.5	Rls 14.47, 16.97G, 18.42H, 20 and 21.	Feb. 1996	Retired	
Rls 4.52	Rls 14.47, 16.97G, 18.42H, 20, 21 and 22	Oct. 21, 1996	Current	Controlled release for new system sales on PCs using Windows 3.1. Upgrades available.
Rls 5.02	Rls 14.47, 16.97G, 18.42H, 20, 21 and 22	Oct. 21, 1996	Retired	
Rls 5.6	Rls 14.47, 16.97G, 18.42H, 20, 21 and 22	Oct. 1, 1997	Current	All new system sales/upgrades for Windows 95 platform. * Maint. Windows, Alarm Mgmt and Ethernet connectivity are only compatible with X11 Rls 22.

Note: MAT Releases 2.11, 4.02 and 4.6 are not listed in this table because they were never introduced in to the CALA market.

3.3 MAT HARDWARE SUPPORT PLAN

Important: The Nortel CALA Inc., support plan covers MAT software ONLY.

MAT hardware support is as follows:

- a) **Tools:** The customer is responsible for purchasing their own terminals to support MAT. Therefore, support services for MAT tools are dependent on what is offered by the manufacturer of the tool(s) purchased.
- b) **MDR Buffer Boxes:** If the customer has an established support agreement (warranty) with MDR, the support is as defined in that agreement. If no agreement has been established, buffer box upgrades can also be performed on an as-needed basis by MDR, for a set fee. Contact MDR for details.
- c) **POLLCAT Buffer Boxes and TSB Buffer Boxes** are sold by alternate manufacturers. Support services for these two buffer boxes are dependent on what is offered by the manufacturer.

Section 4

NORTEL's Meridian 1 Right-To-Use Policy

4.1 SOFTWARE AND RIGHT-TO-USE (RTU)

A Northern Telecom **PBX system** requires a basic hardware package accompanied by an associated software generic. Both elements, hardware and software, are required to operate a system. For new system sales a basic system hardware package cannot be sold without the accompanying software license and the software cannot be licensed without the basic hardware system package.

The customer or end-user does not own the software; the use of the software is granted through a "**right-to-use**" license. Software cannot be sub-licensed to a **third party**. The software must be returned to Northern Telecom when the original system is removed from service.

Northern Telecom's **evergreen Policy** allows older systems to be upgraded to the latest software release. Evolution or upgrade package prices include only the hardware. When adding new software features the customer will pay for the new software features not associated with the original system. The software is transferred or applied to the new upgraded system.

The right-to-use the software runs on a "per system basis" and is individually identified for each system. Thus, the **removal from service** of the hardware, caused the license agreement to be terminated. The only exception to this automatic termination is original software used in new equipment due to hardware upgrade.

Excess hardware belongs to the customer. Any hardware displaced or not reused cannot be used to build another system, because there is no associated software. Left-over hardware can be used for spares and future maintenance to support compatible systems and is a valuable inventory when product is manufactured discontinued. Excess hardware if sold, is sold for its hardware value only and not sold for its system value.



Station Message Detail Recording 5
CALA
Channel Introduction Package
V1.0

Date: Sept., 1997

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Station Message Detail Recording 5

1.0 Introduction

This Channel Introduction Package introduces a new version of the Station Message Detail Recording Device 5 (SMDR5). The SMDR5 tracks external telephone usage on all Norstar DR2 to DR5 KSUs, the Modular Integrated Communications System (MICS), and the Compact Integrated Communications System (CICS). The SMDR5 tracks and displays specific information about external call activity such as:

- date and time of the call, and digits dialed
- answered incoming calls
- call transfer or call hold
- elapsed time between origin of a call and when it was answered
- Real Time records for ringing, answered, unanswered, transferred, and released events for incoming calls with CLID information
- the originating station
- call duration and ring duration
- calls associated with Account Codes and Passwords
- standard records with Calling Line Identification (CLID)
- calls in both CLID and Real Time CLID formats
- display of Bearer Capability data

The collected information of the SMDR5 can be analyzed from a serial printer, interfaced to a third party call accounting hardware or PC-based call accounting software, or even interfaced to a PC-based database lookup software to provide enhanced customer services and options such as:

- Telephone trunking costs can be allocated to internal departments, individuals, or multi-tenant environments where the same telephone system is utilized and separate budgets dictate business expenditures.
- In environments such as legal offices, answering services, collection agencies, and telemarketing services, charges for telephone trunking costs or time spent for services rendered can be billed back to clients through utilization of Account Codes.
- Analysis of telephone call traffic can result in reduction of monthly trunking costs and long distance charges, maximized system facility usage, and optimal employee telephone efficiency. This also provides a means to guard against abuse of the telephone system with regards to long distance charges and internal/external misuse of the telephone facilities.
- Customer service is enhanced when immediate incoming call information (CLID) is provided to a PC-based database lookup software that displays important customer profile information in real time on a nearby screen. This information allows for personal attention to be provided which elevates the feeling of importance and overall satisfaction of the customer, improves efficiency by expediting the response to the customer's needs, and presents an image of a knowledgeable and professional organization. This type of application can be used in a multitude of environments such as retail outlets, pharmacies, order entry departments, medical, hospitality, banking, etc.

The SMDR5 provides full compatibility with all Norstar supported analog lines and digital T1 lines, as well as the ISDN BRI lines introduced with the CICS 2.0 and MICS 2.0 releases. The SMDR5 will operate on all DR2 and up North American KSUs.

In addition to the feature functionality provided on previous versions of SMDR, SMDR5 will provide the following feature and physical enhancements:

- Support of ISDN trunks and terminals in CICS 2.0 and MICS 2.0 releases.
- Increase of the maximum number of simultaneous line calls from 80 to 120.
- Serial port support for baud rates from 1,200 to 19,200.
- TCM pass-through for support of a Norstar station set on the same TCM loop.
- LED Status Indicator
- Reduction of hardware requirements to conform with industry standard cable connections

2.0 Product Overview

The Norstar SMDR5 provides call detail records for a maximum of 120 simultaneous line calls in ASCII form over an RS232 compatible interface. The records can be routed directly to a serial printer or other data collection devices. The SMDR5 unit can also interface with third party call accounting hardware or PC based call accounting softwares that accept either the SL1 format records or the Norstar format records.

SMDR5 can replace the SMDR4 on all DR2-DR5 systems. SMDR2 will continue to be manufactured to support DR1 KSUs (SMDR5 will not operate with DR1 software). The SMDR4 will be discontinued with the introduction of SMDR5.

2.1 Features of the SMDR5

The SMDR5 unit provides the following features which are described in detail further in this section:

- Output Record Format
 - Norstar Records
 - Standard Records + CLID
 - Real-time Records + CLID
 - DDI Busy
 - Display Bearer Capability
 - SL-1 Records
 - Standard Records + CLID
- ISDN-Trunks /Terminal - Line / Extension Numbering in both formats
- Record Screening (Reports)
- Alternate Network Provider Access & Digit Suppression
- Local Administration (XFeature)
- Account Code Entry

2.1.1 Norstar Record Format

Norstar records are in the form of multi-line ASCII strings and can be presented in English. The Norstar records from SMDR5 will support Standard CLID, Real-Time CLID or both, Bearer Capability (Information transfer capability - Octet 3) and DDI Busy reporting, all of which are selectable through Administration. Note that additional Bearer Capability information (HLC & LLC) will NOT be reported.

2.1.1.1 Standard Records + CLID

This is an example of Norstar record for a simple incoming call in the standard CLID format:

```
----- 12/17/92 11:12:01 LINE = 0013 STN = 7426
CALLING NUMBER 4032919123
NAME UNKNOWN
LONG DISTANCE
00:00:00 INCOMING CALL RINGING 0:32
00:00:39 HOLD
00:01:12 UNHOLD
00:02:47 CALL RELEASED
```


2.1.1.2 Real-time Records + CLID

This is an example of a Norstar record for a simple incoming call with in the Real-Time CLID format. The G (Ringing) record shows the time when the CLID data is received, not when the call started alerting. The call gets answered 11 seconds after CLID is received, and is released 55 seconds after the call is answered.

Date	Time	Line	Set	CLID Number	Name	Type
*030193	154615	0019	7343	6137635114	John Doe	G
*030193	154626	0019	7343	6137635114	John Doe	A
*030193	154721	0019	7343	6137635114	John Doe	R

2.1.1.3 DDI (Digital Dial Inward) Busy

When a DDI call is placed to the system that receives busy treatment, a new event will be used to report DDI busy calls.

An example of a DDI busy incoming call is as follows:

```
----- 20/03/95 14:36:00 LINE = 0035
00:00:00 BUSY
```

2.1.1.4 Display Bearer Capability

For calls with Bearer Capability associated with the call, the information consists of the following for CCITT standardized codings:

Information transfer capability: Speech
 Unrestricted digital information
 Restricted digital information
 3.1 kHz audio
 7 kHz audio
 Video

An example of an incoming call with Bearer Capability data is as follows:

```
----- 20/03/95 14:42:00 LINE = 0024
BC = SPEECH
00:00:00 NO ANSWER      RINGING 3:15
```

2.1.2 SL-1 Record Format

The Norstar SL-1 Records are based on SL-1 CDR, generic X11 release 18h (International) using the Classic (OLD) format. In SMDR5, the Norstar SL-1 Records will also support Standard CLID, selectable through SMDR Administration.

Since the SL-1 Format does not support reporting of Bearer Capability and DDI Busy, the SMDR5 will not report Bearer Capability or DDI Busy on the SL-1 reports format. Note that as a DDI Busy call is treated as an unanswered incoming call and SL-1 does not report unanswered incoming calls, therefore DDI busy calls will not be reported for SL-1 format. SMDR5 Administration will allow the user to choose between the standard SL-1 format and the standard SL-1 with CLID format which will show CLID on the second line for calls that have CLID associated with them.

Note that since SL-1 CDR generic X11 release 18h does not provision for Name delivery in the SL-1 record format, no Name will be delivered in the SL-1 records.

SL-1 records are industry standard and are used primarily when the SMDR Interface Unit output is supplied to a commercial call accounting package or equipment. SL-1 records are in the form of one or two line ASCII strings.

An example of an incoming call with CLID information is as follows:

N 038 00 T007000 DN4223	05/15 17:47
6155550000xxxxxx	

2.1.3 ISDN-Trunks / Terminal - Line / Extension Numbering in both formats

The format for ISDN Trunk line numbers and ISDN Terminals extension numbers will be the same as the other line numbers and extensions for the SL-1 and Norstar records. Note however, that each loop on the ISDN card will have a single unique extension number and can support up to 8 ISDN terminals.

2.1.4 Record Screening (Reports)

This feature allows custom reports to be created by providing filters that will select which call records will appear in the output reports. The following are the choices of custom reports:

Report all calls	ALL
Report outgoing calls only	Outgoing
Report calls with account code only	Accounts
Report calls with certain digit prefixes only	PREFIX

2.1.5 Alternate Network Provider Access & Digit Suppression

This feature allows the suppression of certain digits in the output reports. On calls that start with long distance access codes, a variable number of consecutive digits immediately following the access code can be suppressed in the output records. This aids in the reduction of potential toll fraud and simplifies the analysis of records.

2.1.6 Local Administration (Xfeature)

Several SMDR5 features require administration. An XFeature session will be used to provide administration. This XFeature code will be different from the XFeature code used for Account Code Entry. Administration will be provided in English only. The following represents the programmable parameters:

Printer Speed	1200, 2400, 4800, 9600, 19,200 baud
Output Format	Norstar or SL-1
SL-1 Types*	Standard or CLID
Norstar Types*	Standard, CLID, Real Time or All
Output Language	English
Report Types	All calls, outgoing calls only, calls with account codes and passwords only, or prefix.
Account Feature Code	F9XX (X is in the range 0-9)

* SL-1 and Norstar Types with CLID and/or Real Time are available only when SMDR5 is connected to a DR5 or greater KSU. If SMDR5 is connected to DR2-DR4 KSUs these options are not available.

2.1.7 Account Code Entry

The Norstar SMDR5 supports account code entry. Account code entry is not forced and there is no validation of account codes. Account code entry will be accessed by depressing the Feature button and the appropriate "9xx" code.

2.2 Compatibility

The following represents which SMDR units deliver the full functionality provided by the various Norstar KSU releases. SMDR1, SMDR3, and SMDR4 have been or will be manufacture discontinued.

	<u>DR1</u>	<u>DR2</u>	<u>DR3</u>	<u>DR4</u>	<u>DR5</u>	<u>CICS1.0</u>	<u>MICS1.1</u>	<u>CICS/MICS 2.0</u>
SMDR1*	Y	Y	Y	N	N	N	N	N
SMDR2	Y	Y	Y	Y	N	N	N	N
SMDR3*	N	Y	Y	Y	Y	N	N	N
SMDR4*	N	Y	Y	Y	Y	Y	Y	N
SMDR5	N	Y	Y	Y	Y	Y	Y	Y

**discontinued or soon to be*

3.0 Physical Description

SMDR5 is packaged in a different plastic housing than SMDR4 and is identified by new CPC and Engineering Codes (see 4.0 Ordering Information). The name *SMDR5* will also appear on the label on the plastics to distinguish it from previous SMDR units. Numerous physical modifications designed to enhance functionality of the SMDR5 unit are as follows:

- The physical parameters of the SMDR5 hardware (length:170 mm; width:140 mm; height:40 mm) are smaller than previous versions and reduce the footprint requirements in the telephone room or on the desktop.
- A separate wall-mount 5 Vdc power supply is required to power the unit. This provides a dedicated power source to support the increased functionality of the SMDR5.
- A TCM pass through port is provided to support a Norstar set on the same station port. This eliminates the need for additional wiring and allows for increased flexibility of SMDR unit placement.
- A DB-25 connector (DCE) is used to connect the serial port to a printer or other devices. This better conforms to industry standards and eliminates the need for the 9 to 25 pin adapter previously used on earlier versions of SMDR.
- A single rear-facing green LED is equipped to indicate unit status. The LED is used to indicate four possible conditions the SMDR5 may be in that will be of interest to the end user. These conditions and the operation of the LED under those conditions is shown in the following table:

SMDR-ISDN State	LED Action	On-Off Cycle
Normal	steady on	On continuously
Overflow	single blink on	On 0.25 s, Off 0.75 s
Off-line (error on powering up)	single blink off	On 0.75 s, Off 0.25 s
Waiting for file download	fast blink	On 0.25 s, Off 0.25 s

The SMDR5 RS-232 port is configured as a Data Communications Equipment (DCE) device and can be connected to either a serial printer or Personal Computer for PC-based applications which support the following signals:

TXD Transmit Data
RXD Receive Data
CTS Clear to Send
DSR Data Set Ready
DTR Data Terminal Ready
GND Signal Ground

The SMDR5 is designed to be wall mounted by using a keyed mounting plate attached to the unit. The unit has a maximum loop length of 2660 feet (800 m).

Packaged with the unit is a SMDR Installation Card and a SMDR5 System Coordinator Guide. (The 9 to 25 pin RS-232 adapter previously included with the SMDR4 is no longer required due to the replacement of the 9 pin connector with the DB-25 connector on the SMDR5 unit.)

4.0 Ordering Information

These new products are scheduled for availability from Nortel in September 1997. Products listed in **bold text** are replacements for those listed in plain text.

CALA Ordering Information

<u>Product Description</u>	<u>NT Code</u>	<u>CPC</u>
SMDR5 (Eng)	NT8B95AK-93	A0661079
SMDR4 (Eng)	NT8B95AG-93	A0623207
SMDR5 System Coordinator Guide (Eng)	P0857338	
SMDR4 System Coordinator Guide	P0801973	
SMDR5 Installation Card (Eng)	P0857403	
SMDR4 Installation Card	P0739322	

5.0 Warranty and Repair

The standard "Norstar Key Telephone Systems-Warranty and Repair Policy and Repair Procedures" will apply to the Norstar components listed in this document.

6.0 Training

6.1 Technical Training

There is no additional technical training provided for the SMDR5. The product ships with all the appropriate documentation to facilitate a simple installation and user process.

6.2 Sales Training

There is no additional sales training provided for the SMDR5.

7.0 Contact List

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New Product Introduction
Product Development
CTAS Technical Support:

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Norstar Remote Utilities 4.0
CALA
Channel Introduction Package
V1.0

Date: July 7, 1997



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Norstar Remote Utilities 4

1.0 Introduction

Northern Telecom (Nortel) is pleased to announce the availability of Norstar Remote Utilities 4.0 (NRU 4), the latest release of Norstar remote administration software. Norstar Remote Utilities 4.0 is a business tool specifically designed to provide superior service and cost effective support of Norstar business communication systems. Norstar Remote Utilities 4.0 replaces the existing Norstar Remote Utilities 2.0 product and offers the following additional enhancements:

- Administration of MICS 2.0 and CICS 2.0
- Backup and Restore capability for MICS 2.0 and CICS 2.0
- Off-line Programming capability for MICS 2.0 and CICS 2.0
- Tree Browser tool for MICS 2.0 and CICS 2.0
- Report Printing capability for MICS 2.0 and CICS 2.0
- Softcopy documentation

2.0 Product Positioning

Norstar Remote Utilities 4.0 enables users to substantially reduce operation costs and improve responsiveness by providing enhanced system support without a site visit. NRU 4 allows distributors to implement improvements in their support processes for increased profitability. Installed base management with NRU 4 reduces operations costs, creates new service revenue opportunities, and enhances the distributor's image and competitiveness as a responsive service provider making use of leading edge technology.

2.1 Distributor Benefits

Operational cost savings

-Reduces the need for site visits on 60% of trouble calls. Initial implementation costs can be recuperated within 3 service calls (based on \$75.00/hr per visit). Off-line Programming capability improves system installation efficiency

New service revenue opportunities

-Promotes additional maintenance revenue by offering low cost, real time system support in addition to other capabilities such as backup/restore, database reports, etc.

Increased service responsiveness

-Immediate response to major and minor service requests greatly increases customer satisfaction levels. Time spent on each service request is reduced, thus increasing productivity levels.

Increased serviceability

-Real time terminal emulation, database administration, diagnostics, and system analysis provide optimal service ability by reducing the need for common site visits due to incorrect programming (end user/technician), time and date changes, system speed dial changes, unplugged sets, DND activation, etc.

Increased system optimization

-Real time system inventory access provides for immediate implementation of 100% of database-only related adds, moves, and changes as well as preparation for adds, moves, and changes requiring additional hardware.

2.2 End User Benefits

Optimal repair service

-Immediate response to service requests promotes customer satisfaction and reduces customer inconvenience and downtime created by subject of service request. Areas such as hardware outages, service impairing database changes, and human error can be easily diagnosed and resolved in an expedient manner.

Increased productivity

-Faster distributor response to adds, moves, and changes increases customer productivity while minimizing inconvenience levels in areas such as departmental personnel changes, outside line reconfigurations, system feature implementation, voice mail administration, etc.

Reduced programming

-Ease of distributor remote access reduces end user requirements for programming and training.

3.0 Product Description

3.1 Product Overview

Norstar Remote Utilities 4.0 (NRU 4) brings together Norstar Manager for Windows™ 3.4 and Norstar Remote Tools in a single package. Remote Tools is made up of Remote Set, a part of the previous releases of Norstar Remote Utilities, a new faster Backup and Restore tool for Modular ICS 2.0 & Compact ICS 2.0, a Tree Browser tool to view system programming from a single screen, and Off-line Programming capability to facilitate more efficient system installations. Each software component assists users in administering, maintaining, installing and programming various Norstar key and voice mail systems.

The NRU 4 application, installed on a PC located at a remote location or at the phone system site, communicates through a Remote Access Device (RAD). A RAD connects the different components of the NRU4 to a Norstar system via a station port and can auto answer an existing line on the Norstar system. Additionally, calls can be manually transferred to the RAD by an on-site operator. In remote connections a separate connection device must be used by the PC to communicate with the RAD. You can choose either a modem or a Norstar Data Communications Interface (DCI) as the connection device.

Note: The DCI is not supported by Modular ICS or Compact ICS software feature cartridges. On these systems you can only use a modem.

The following sections provide an overview of the specific components of NRU 4:

3.1.1 Norstar Manager 3.4

Norstar Manager 3.4 is an operations management tool that provides remote database administration and maintenance functionality for all Norstar systems with DR5 software or later, up to but not including MICS 2.0 (excluding all Compact ICS systems). The screens and menus allow the user to navigate through the different areas of Norstar Manager 3.4 and easily view and/or change Norstar information and programming. In addition, there are mouse support, scroll bars and choice lists.

The features and functionality of Norstar Manager 3.4 remain the same as the previous version of Norstar Manager 3.3 with the exception of those minimal changes listed in section 3.1.7 User Interface.

3.1.2 Remote Tools

3.1.2.1 Remote Set Tool

Remote Set is a fast, effective remote administration tool that provides Windows™ based capabilities for configuring, administering and maintaining Norstar Key System Units and peripherals via simulated M7310 and M7324 extension types. If

installed as a standalone product, Remote Tools provides you with the facilities to store profiles of Remote Access Device (RAD) and Internal Remote Access Device (I-RAD) connections and desired extension type information on the PC hard drive. Remote Set provides the following capabilities:

- Man Machine Interface (MMI) that simulates a Norstar set (M7310 or M7324) when programming
- Remote configuration, administration and maintenance functions for most Norstar system types and software releases
- Ability to remotely program Voice Mail features except those requiring voice capability
- Remote programming of all Norstar peripherals
- Remote administration of the RAD and I-RAD
- On-line programming of the KSU with simulated M7310 and M7324 extension types
- Direct queries of device status
- Copying of extensions and lines within a system

3.1.2.2 Backup and Restore Tool

This tool provides the ability to Backup the system programming into a file on the host PC, and to Restore that programming to a target KSU. The backed up data is a non-volatile RAM (NVRAM) image that can only be used for backup and restore purposes. This data cannot be modified; to modify system programming off-line, the Off-line Programming tool must be used.

3.1.2.3 Off-line Programming (OLP) Tool

The OLP tool is used to program system parameters while off line from the KSU. It's user interface is a Microsoft Excel based document (E-Form) pre-formatted with feature headings, with blank cells for data entry. A minimum level of default settings are programmed into the E-Form for convenience.

The "Acquire ICS" command copies the remote system programming into a blank E-Form for modification as required, and the "Program ICS" command loads the modified programming back into the remote KSU.

Reports can be printed from the OLP E-Form interface, with the ability to select desired sections for printing.

A potential time saving feature of the OLP E-Form is a Routing Table template that can be used to simplify programming of alternate routing.

3.1.2.4 Tree Browser Tool

The Tree Browser tool provides a single-screen view of the KSU programming, and is an alternate method of programming system parameters. Where the Remote Set allows viewing and programming via the 2-line display, the Tree Browser presents a split-screen view of the system parameters much the same way as the Windows 95 Explorer.

3.1.3 Documentation

To simplify product distribution and enhance ease of use, documentation will now be included on the CD-ROM containing the NRU 4 software, and on diskettes with the 3.5" diskette format version of the product. By providing the documentation in software formats, the information can always be accessible via the PC. Paper copies of documentation will no longer be available as separately orderable items.

The electronic documents will be hyperlinked and indexed to make searches easier. The documentation has been updated to include installation and user instructions for Norstar Manager 3.4 and Remote Tools and is available in English and French versions. Both English and French versions are included on the common CD-ROM, while separate 3.5" diskette versions are available in either language.

3.1.4 Physical Description

The NRU 4 application software, available on both 3.5" disks or CD-ROM, runs on an IBM 486 (or greater) PC or compatible, running either MS Windows™ 3.1 or Windows™ 95. The NRU 4 will operate on a configuration of processor, memory and peripherals which is comparable to that provided by an IBM 486 computer. The computer requires a VGA monitor and at least 8 Mbytes of memory for the NRU 4 software. The NRU 4 will run on a laptop provided that it is equipped with the above hardware configuration. A minimum of 15 Mbytes of hard drive space is required for installation and operation of the NRU 4 software.

Note: For improved speed and to accommodate future application enhancements, an IBM 486 PC or compatible is recommended to run the NRU 4.

The hardware component of the remote administration package is a Remote Access Device (RAD), which acts as a communication bridge between the KSU and PC. The RAD provides B to D channel conversion at 1200 or 2400 baud remotely, or 9600 baud on a direct connection, security against unauthorized remote access, and a means of calling a remote alarm device (a printer or a console).

Note that the Norstar Compact ICS utilizes an I-RAD instead of the standard RAD. The Compact ICS 2.0 introduction will increase the IRAD speed to 14,400 baud. In addition, a FASTRAD (A0659741) will be available in July/97 which increases the speed to 14,400 baud remotely or to 19,200 baud on a direct connection.

A commercially available Hayes compatible modem, capable of operating at 1200 or 2400 baud, or 14,400 baud is necessary for establishing remote connections between the PC which is running Remote Tools and the RAD. The modem may be external or internal to the PC.

Note: It is highly recommended that the modem have two separate line and phone ports if the operator assisted call feature of Norstar Manager 3.4 or Remote Tools is to be used.

3.1.5 Compatibility with KSU software

Norstar Manager 3.4 is compatible with the following Norstar system software:

	CALA
• 3x8 DR5	all releases
• Compact DS DR5	all releases
• Compact DR5	NT5B10DF*
• Modular DR5	NT5B24DH*
• Modular Centrex+	NT5B29DD*
• Norstar-PLUS Modular ICS Release 1 /T1	all releases
• Norstar-PLUS Modular ICS Release 1/Centrex	all releases
• Norstar-PLUS Modular ICS XL	all releases
• Norstar-PLUS Modular ICS XC	all releases
• Norstar-PLUS NA-MICS-DR 1.1	all releases
• Norstar-PLUS USA-MICS-XC 1.1	all releases

** These versions or later releases are compatible (previous versions are not compatible)*

Remote Tools (excluding Backup and Restore tool) is compatible with all Norstar system types and all versions of Norstar system software (DR2 or greater) provisioned with the new RAD (A0648815-English and A0648816-French), available since March 30, 1996.

3.1.6 Compatibility with Remote Access Device

Norstar Manager 3.4 is compatible with all versions of the RAD except for the I-RAD of the Norstar-PLUS Compact ICS.

Remote Tools is compatible with only the I-RAD of the Compact ICS and the new RAD (A0648815-Eng and A0648816-Frc), available since March 30, 1996.

3.1.7 User Interface

NRU 4 includes Remote Tools and Norstar Manager 3.4, which contains a launcher for Remote Tools access from within the customer database screen. You can use Norstar Manager and Remote Tools independently, or you can access Remote Tools while you are working in Norstar Manager. The following describes user interface attributes for the different components.

Norstar Manager 3.4

The Norstar Manager 3.4 user interface remains the same as Norstar Manager 3.3 with the exception of the following change:

- From the File menu, Open Remote Tools now replaces the former Remote Set On-line Session and Remote Set Quick Connect options. When launched from Norstar Manager 3.4, the Remote Tools goes directly to the Norstar Remote Tools screen and uses connection details from the customer database. After launching Remote Tools, the Norstar Manager 3.4 application is disabled until the user exits from the Remote Tools applications window. Exiting from this window drops the connection and returns the user to the Norstar Manager 3.4 customer database window.

Norstar Manager 3.4 also contains support for Norstar Compact ICS in the customer directory database. If the user chooses the Start Online Session menu item when a Norstar Compact ICS is selected, then Remote Tools is automatically launched. Otherwise, a Norstar Manager 3.4 connection is established.

Note that in order to switch between Norstar Manager 3.4 and Remote Tools connections, the current call must be terminated and a new connection established. A user may only operate Remote Tools or Norstar Manager, not both at the same time.

Remote Tools

The Remote Tools program group provides access to the various tools. Each tool works through a series of screens and menus which allow you to navigate through the different areas of the application.

Remote Set Tool: Once an on-line connection is established via the Remote Set Tool, the screens will simulate either an M7310 or M7324 set of your choice for system database administration and maintenance. The primary interface of both extension screens consists of keys and text displays that simulate the appearance of the respective Norstar extension. From the extension screens you can perform various programming activities. From the M7310 or M7324 extension screens you can perform any type of programming or set activity that can be done from a normal on-site extension. This includes Feature **CONFIG, Feature **ADMIN, and peripheral programming of devices such as Voice Mail, SMDR, VMI, etc., as well as initiation of intercom calls *, answering/transferring of incoming calls*, etc. Each field in the screen is also accessible via direct keyboard entry or mouse selection.

** When initiating a call or answering/transferring a call, a voice path is not established.*

Backup and Restore Tool: This tool presents a dialogue box that gives the user a choice of backing up or restoring the KSU programming and/or the CICS Auto Attendant messages. A progress bar gives an indication of time required to complete the selected action.

Tree Browser Tool: The Tree Browser presents the system's programming categories in a single, split-screen view. Changes to the system programming can be made using this tool, which provides an alternative to the simulated 2 line display available with the Remote Set tool.

Off-line Programming Tool: This tool provides the ability to program a system while off-line. Data input is via a Microsoft Excel based interface called the E-Form. Once the data is filled into the appropriate E-Form cells, the programming can be loaded into a remote KSU via the "Program ICS" function. Conversely, programming from a remote system can be copied into a blank E-Form via the "Acquire ICS" function. The OLP interface also allows the user to print a report of the system programming for future reference.

3.1.8 Installation and Upgrades

The NRU 4 installation process is similar to that of previous versions of NRU. You have the option of either installing both Norstar Manager 3.4 and Remote Tools, or only Remote Tools on the PC. Installation of NRU 4 (all components) takes approximately 3-5 minutes.

Software upgrades are supported from the following releases of Norstar Manager:

- Version 2.1— with an option to replace or keep version 2.1 installed
- Version 3.0— with or without 2.1 also installed
- Version 3.1— with or without 2.1 also installed
- Version 3.2— with or without 2.1 also installed (component of NRU 1)
- Version 3.3— with or without 2.1 also installed (component of NRU 2)

4.0 Specifications

The minimum PC requirements for Norstar Remote Utilities 4 are:

- IBM compatible 80486 (Pentium or equivalent recommended for best performance of the Off Line Programming tool)
- 8 MB RAM memory (16 MB recommended for the Off Line Programming tool)
- MS-DOS 5.0 (and later) and either Windows™ 3.1 or Windows™ 95
- 3.5" 1.44 MB diskette drive or CD-ROM drive
- VGA color monitor
- 101 key enhanced keyboard
- 15 MB hard disk space
- 2400 baud or faster Hayes-compatible internal or external modem
- 1 serial port (required for direct connection to RAD)
- 1 parallel port (required for hard copy of reports)

5.0 Ordering Information

These new products are scheduled for availability from Nortel in June 1997. Products listed in **bold text** are replacements for those listed in plain text.

CALA Ordering Information

<u>Product Description</u>	<u>NT Code</u>	<u>CPC</u>
Norstar Remote Utilities 4 (Eng/Frc) (CD-ROM)	NT8B81AU-93	A0670730
Norstar Remote Utilities 4 (Eng) (Diskettes)	NTAB2082	A0670733
Norstar Remote Utilities 2 (Eng)	NT8B81AS-93	A0661467
Norstar Remote Utilities 2 Documentation Kit (Eng) *	NTAB2026	A0664246

* Manufacture Discontinued - See section 3.1.3 Documentation for details

The NRU 4 product ships with all of the appropriate documentation on-disk to facilitate a simple installation and user process.

6.0 Warranty and Repair

The standard "Norstar Key Telephone Systems Warranty and Repair Policy and Repair Procedures" will apply to the Norstar components listed in this document.

7.0 Training

7.1 Technical Training

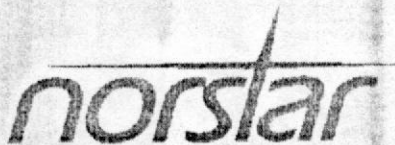
There is no additional technical training provided for the NRU 4. Product ships with self-paced tutorial and appropriate documentation.

7.2 Sales Training

There is no additional sales training provided for the NRU 4.

8.0 Contact List

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NORTEL
NORTHERN TELECOM

Sales and Marketing Bulletin

Number: CALA- 134 MB
Date: September 1997

Fiber Station Module & Fiber Trunk Module Code Changes

The autoranging power supply (110/220v) fiber station and trunk station modules' codes have changed in the recently released Norstar Price Book of August 1997.

The two modules are connected to the Modular ICS (0x32) with fiber expansions. Depending on the number of modules that are connected to the Modular ICS they interlink with the KSU through a 2 or 6 ports fiber expansion card.

The fiber station module increases the capacity of the Modular ICS from 32 stations within the KSU to an additional 16 stations that reside in each fiber station module. The fiber trunk module can increase the capacity of the Modular ICS by a maximum of 12 central office lines per module. Each fiber trunk module can contain a maximum of 3 trunk cards.

In order to purchase the above mentioned items, two new key codes have been issued that replace the old ones. Please note that in the latest release of the Price Book (August '97) the key codes are reversed, therefore an adjustment must be made in your new copies to identify the correct codes.

<u>Description</u>	<u>OLD CPC/ENG CODE</u>	<u>NEW CPC/ENG CODE</u>
Fiber Trunk Module (110/220v)	A0643508 / NTBB20FF-93	A0676085 / NTAB1521
Fiber Station Module (110/220v)	A0643509 / NTBB41FF-93	A0676084 / NTAB1521

Please keep in mind that the August 1997 Price Book will not be official until October 31, 1997.

If you have any questions or comments, or require further information, please contact:

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NORTEL
NORTHERN TELECOM

Magellan

This document can be downloaded in Adobe Acrobat Format
Helpdownloading and viewing the Adobe file.

Magellan Access Switch

Advanced Data Networking for Remote Offices

Magellan Access Switch Highlights

- Multiprotocol = LAN + traditional
- 99.998% Availability
- Low ownership cost
- Robust traffic prioritization

Business information networks are important strategic resources for companies of every type and size. At remote branch office sites, the increasing diversity of equipment - including LANs and traditional networking technology like SNA and async - requires a single, cost-effective networking platform for efficient management.

Similarly, users at these satellite locations have stringent expectations for high-quality service, reliability, and availability.

Delivering a single, flexible, and economical data networking solution to remote branch office sites is the ideal role for the Magellan Access Switch.

A Flexible Multiprotocol Platform

The Magellan Access Switch is a flexible, multiprotocol platform that provides access switching for both Magellan Passport and DPN-100 enterprise networks. Its small modular package features four interface slots, which provides support for a range of access interfaces, protocols, and WAN speeds up to 256 kbit/s to meet the total data networking requirements of remote office locations. The Magellan Access Switch offers a wide variety of interfaces such as ethernet, token ring, V.24, V.35, V.36, X.21, G.703, and DS-0B, and protocols including IP, IPX, SNA, frame relay, X.25, bisync, and async. The Access Switch is a powerful single-platform solution that supports both LAN internetworking and WAN traffic and has the capability to evolve to meet future networking requirements.

Designed to be modular, the Access Switch provides up to 32 ports - flexible enough to handle current remote site needs, with room to grow. As new protocols, access interfaces, and

ports are needed, they can be accommodated simply by software downloads from a central site and/or quick card changes at the remote site.

The Access Switch also supports Northern Telecom's unique, network-wide Multiple Priority System® - with loss, delay, and priority parameters - to ensure optimum network efficiency and predictable response times.

High Reliability

With proven availability of more than 99.998%, the Magellan Access Switch gives confidence to network operators and users and provides the reliability that Northern Telecom builds into all Magellan products.

In addition, the Magellan Access Switch uses intelligent networking features - including dynamic rerouting, call redirection and hunt groups - which ensure that traffic always gets to its destination.

Economical

The Magellan Access Switch provides very low cost of ownership through both facility and operational savings. It **minimizes network line costs by efficient use of bandwidth**, and eliminates duplicate facilities by consolidating multiple networks - such as SNA and LAN networks - onto a single backbone. The Access Switch also supports public facilities including frame relay, switched 56, private line, and X.25 options for cost-effective trunking alternatives.

Additional facility savings can be realized with the Access Switch's intelligent dial-backup network link feature. Redundant leased lines can be replaced with an inexpensive, automatically dialed line to transparently recover from link failure.

The Access Switch keeps operational costs to a minimum. New interface cards and software updates can be added as you go - there is no need to 'over configure'. In addition, the Magellan NMS (Network Management System) reduces costs since skilled technical personnel are not required at the remote sites.

Specifications

Protocol Support

LAN Interconnection

- ethernet routing TCP/IP, IPX, DECnet, Appletalk, OSI, XNS
- token ring ISRB (intelligent source routing bridge)
 - local/remote wide area bridge

- local multipoint bridge (4 ports)

Frame Relay

- fully standards compliant UNI and NNI
- comprehensive congestion avoidance
- complete quality of service statistics
- class of service options

SNA Routing Services

- SDLC
 - all PU types
 - full/half duplex link station support
 - group poll
 - multipoint (physical/virtual)
 - NRZI
- Token Ring
 - LLC2 termination
 - all PU types
- APPN Routing
- T2.1 Router
 - SDLC, TRN, Dependent LU Support
- LU Switching Service
 - multihost service
 - multiplexing
- Bisynchronous Service
 - 3270 DSP (BSC-3)
 - 2780/3780 (BSC-1)
- ITU/T (formerly CCITT)
 - X.25
 - X.3/X.28/X.29
 - X.32
- Other Protocols
 - transparent HDLC, ALC and API for point-of-sale terminals

Physical Interfaces

- supports 802.3 (with AUI media support), token ring, V.24, V.35, V.36, X.21, G.703, DS-0B, DSMX, DM-A1, IDN, X.22
- Ports, Speeds, Trunks
 - supports up to 32 ports
 - 10 Mbit/s ethernet access
 - 4 and 16 Mbit/s token ring access
 - access speeds from 300 bit/s to 128kbit/s
 - trunking speeds from 4800 bit/s to 256 kbit/s
 - terrestrial and satellite trunking
 - dial backup network link

Features and Options

- ITU/T Network wide features and options including closed user groups, network user identifier, hunt groups, call redirection, and class of service priorities and access gateways
- Addressing features and options including X.121 and E.164 support, shared DNIC routing, PNIC routing and RPOA
- Access service features and options including switched virtual circuit, permanent virtual circuit, direct calls, fast select, and secure menus
- Accounting features and options including detailed records, reverse charge and acceptance, and time of day accounting

Packaging

- height: 17" (430mm)
- width: 8.5" (215mm)
- depth: 16" (405mm)
- mounting options: tower, desktop or 19" rackmount

Environmental Specifications

Temperature:

- Operating: 10 to 40deg.C
- Storage: -40 to 70deg.C

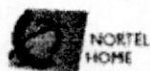
Supply voltage:

14/08/1997

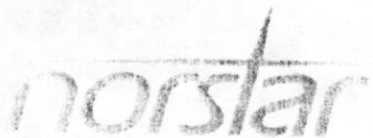
08:36:05 PM

- AC nominal 100-120 V ac or nominal 200-240 V ac autoranging
- DC -48 or -60 V dc autoranging

Return to [Magellan Home Page](#).



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NORTEL
NORTHERN TELECOM

Sales and Marketing Bulletin

Number: CALA-125-MB
Date: July, 1997

Norstar Voice Mail vs. the Competition

Attached you will find a document which compares the fully digital voice mail systems from Norstar versus the analog voice mail systems that our competition markets in the Caribbean and Latin America region.

The document points out the main benefits of the Norstar digital voice mail system. Some of these benefits are ease of use, better utilization of ports, higher productivity, higher quality, transparent connectivity with the KSU, and future applications availability such as Computer Telephony Integration (CTI) with the voice mail system.

Other marketing bulletins will follow which will compare Norstar's voice mails with other voice mail systems manufacture by the competition (Lucent, Octel, Toshiba, etc ...)

If you have any questions or comments, or require further information, please contact:

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COMPETITIVE FLASH

Norstar Voice Mail vs. the Competition

OVERVIEW

Most voice mail systems integrate with a telephone system via analog station ports, which are similar to the analog service provided on the phone jacks you have in your home. The way these voice mail systems communicate with the telephone system is via DTMF (Dual Tone Multi Frequency) tones, or what most of us know as "touch-tones," the same tones our phone at home outputs when we dial a phone number.

Norstar voice mail systems (Norstar Voice Mail and StarTalk products) have always integrated with Norstar via digital station ports. These are the same ports that Norstar stations plug into. Communication between Norstar and all Norstar voice mail products is via the "D-channel" of Norstar's ISDN-like 2B+D architecture. Instead of sending DTMF tones over this D-channel, digital messages (series of 1s and 0s) are sent between Norstar and Norstar voice mail systems.

While analog DTMF integration allows a voice mail system to be used with almost any telephone system, it has several disadvantages to digital integration. These disadvantages are covered below.

NORSTAR VOICE MAIL VS. THE COMPETITION

- Analog voice mail integration is slower than digital integration. Analog voice mail systems send and listen to a series of DTMF tones as their form of communication with a telephone system. Sending and receiving DTMF messages causes more time delays than Norstar's faster digital messages. These time delays result in slower voice mail service, especially on larger systems.
- Since it takes longer to send and receive DTMF tones, analog integration voice mail systems can take 10-20 seconds after a call transfers to voice mail before the caller actually ends up in the desired mailbox. No message can be left until then. Since Norstar Voice Mail uses digital D-channel signaling, callers are instantaneously transferred into the called parties' mail box.
- Without digital messaging, analog integration voice mail doesn't immediately recognize when an internal caller hangs up. So when an internal caller calls the voice mail system and then hangs up, a port is tied up for several seconds before the voice mail system recognizes that it hung up. If ports are tied up longer than necessary, this may mean that no ports are available to take additional calls. Norstar voice mail immediately recognizes when an internal caller hangs up.

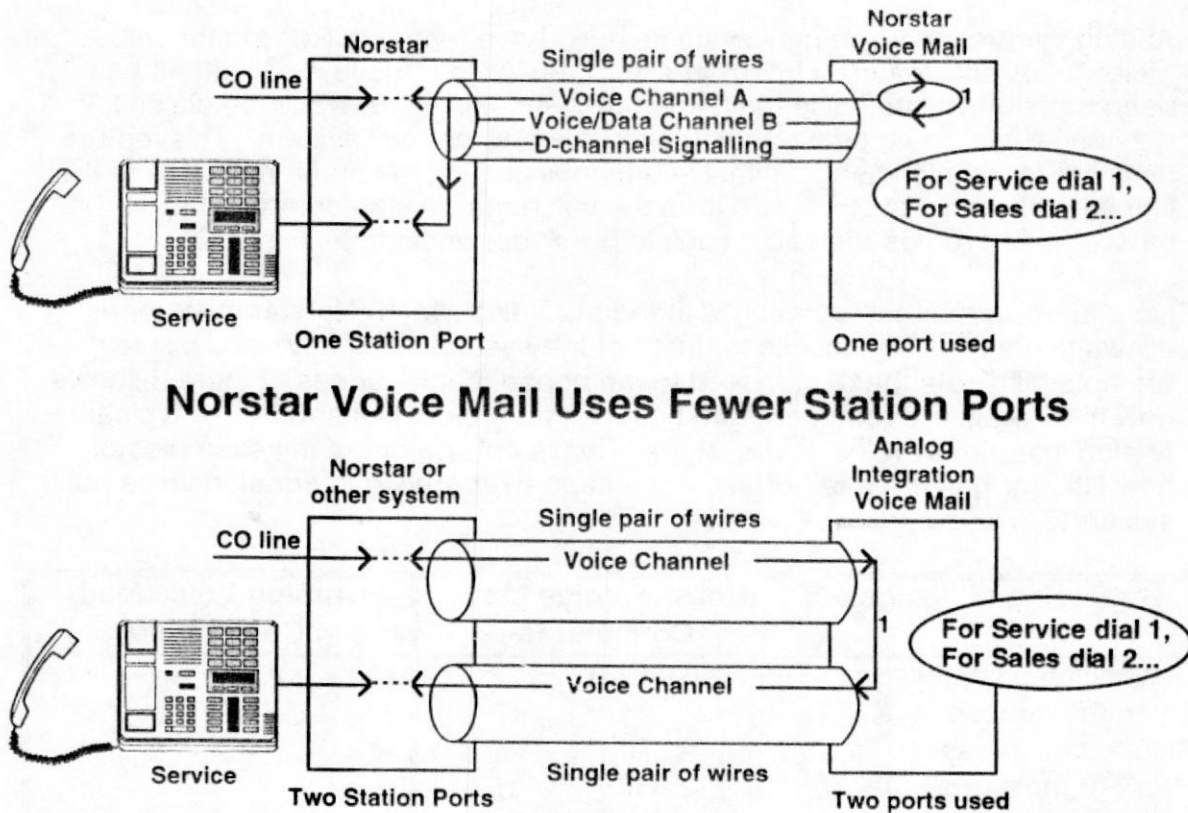


Figure 2

- Analog integration voice mail cannot be administered from a telephone; it must be programmed and administered through a PC console connected to it. Norstar Voice Mail can be programmed and administered through any Norstar M7310 or M7324 telephone.
- To check your messages on many analog integrated voice mail systems, you must enter both your subscriber identification (mailbox number) and a security code even when calling from your own set. With Norstar Voice Mail's intelligent, digital D-channel signaling, you don't have to enter your ID, just your security code. Your ID is automatically passed on over the D-channel.
- Analog integration voice mail ties up a port to notify a telephone that it has a voice mail message waiting. Also, if all ports are in use the message waiting indication cannot be activated at all. Since Norstar Voice Mail uses digital D-channel signaling, it does not use a port to turn on the "Message for you" indication; and the Norstar Voice Mail "Message for you" indication appears immediately after a message is left because it sends a message over the D-channel instead of an analog port.

NORSTAR VOICE MAIL VS. THE COMPETITION CONT'D

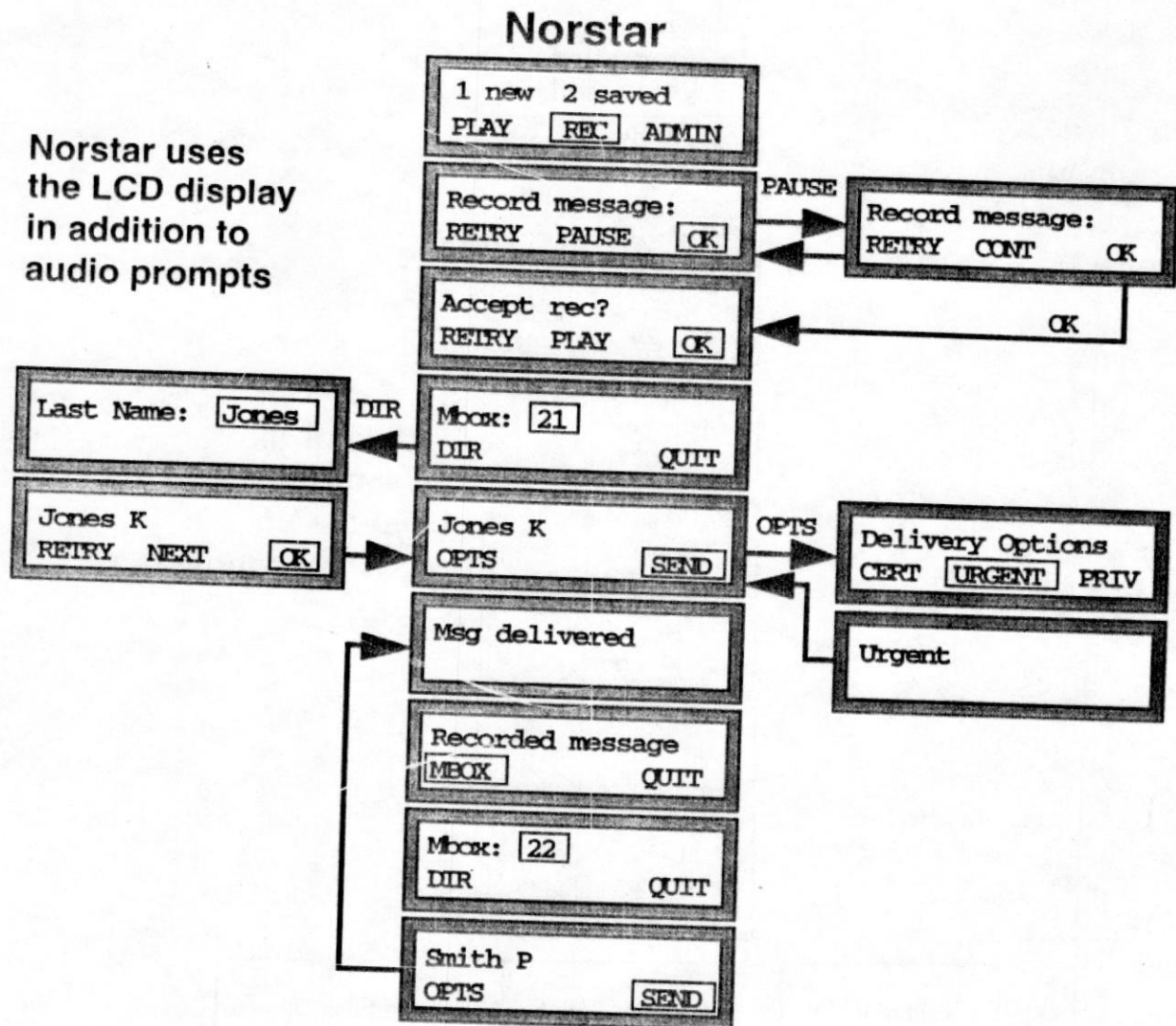


Figure 4

In contrast to Norstar voice mail's fast display prompts as shown in Figure 4, Figure 5 shows that subscribers to a analog integration, voice mail must first listen to slow audio prompts before they can determine which keys to press. Norstar voice mail's usage of the display makes it more intuitive than the analog integration voice mail.

NORSTAR VOICE MAIL VS. THE COMPETITION CONT'D

of knowing that the lamp is off. Since voice mail assumes that the message lamp/display is still on, it may not try to turn it back on the next time a message is left. The subscriber is therefore not notified of new messages. Since Norstar voice mail uses digital integration, it always know the status of the "Message for you" indicator.

Perhaps the greatest advantage to digital voice mail integration, at least when it comes to purchasing a Norstar Plus Voice Mail platform, is that it is "future proofed" in the area of computer telephony integration (CTI). Norstar's unique architecture works in such a way that every time a user goes off hook, on hook, presses a button, or activates a feature on a Norstar phone, every other phone and peripheral on the system knows about it. This is called broadcast messaging and it is done over Norstar's D-channel. With broadcast messaging the Norstar Voice Mail platform can keep track of every phone in the system by monitoring the D-channel. This is an incredible advantage to CTI applications, which can run on the same platform as Norstar Voice Mail. A single CTI application can easily be used by every phone on the system, and this application can monitor and control every phone on the system. Over Norstar's D-channel, this CTI application could do such things as write messages to LCD displays, track off-hook times, or seize call control by taking a phone off-hook and dialing a number. No analog integration voice mail system has these unique abilities.



NORTEL
NORTHERN TELECOM

Sales and Marketing Bulletin

Number: CALA-162-MB
Date: April 1998

This Marketing Communiqué supersedes CALA-118-MB – June, 1997 with updated information. It is intended for internal use only of Authorized Norstar Distributors.

Norstar Century Compliance

Nortel (Northern Telecom) the industry leader in digital communications systems, wants to ensure that you are fully conversant in this important topic so that you are able to make logical, informed decisions. We recognize that it is important for you to be able to understand Century Compliance with regard to the Norstar portfolio, so that you can plan and prepare your transition over the next two years.

Included in this communiqué is a concise explanation which covers each Norstar system and Norstar application. It also includes a statement on the Vantage product line, which was Manufacture Discontinued in 1990. For products which require migration for Century Compliance, we have provided a recommended plan.

Completion of Century Compliant Testing

For the Norstar product line, all releases have been verified and tested for century compliance.

Definition of Century Compliant

"Century Compliant" or "Century Compliance" shall mean that the product shall function without any material, service-affecting non-conformance to the Nortel product specification with respect to the operations performed by such product which are date dependent, provided that the identified baseline software and requisite hardware are installed and the use conforms to the associated documentation.

Norstar Product Line Summary

The product line summary is shown in the following lists. Additional detail notes follow the lists.

- (1) List A – defines the products which are Century Compliant.
- (2) List B – defines the products which are not currently Century Compliant and require a migratory path.

NORTEL PROPRIETARY
List A
Products which are Century Compliant

<u>Product</u>	<u>Century Compliant Software Release</u>
Compact ICS	All releases
Modular ICS	All releases
Norstar 3 X 8	All releases
M7000 series telephone sets	All releases
Compact 6X16	All releases
Modular 8X24	All releases
Norstar Voice Mail	Release 2.0 and higher
StarTalk FLASH	Release 1.5 and higher
StarTalk	Release 2.04L
MINUET ACD	All releases
PRELUDE and CINPHONY ACD	Release 2.00.22 (unbundled) Release 2.00.23 (Norstar Applications Module)
Integrated Voice Response	All releases
Healthcare Receptionist	All releases
Remainder of product line	All releases

List B
Products which are not currently Century Compliant
and require a migratory path

<u>Product</u>	<u>Migratory Path</u>	<u>Date Available</u>
Norstar Voice Mail - lower than release 2.0	Upgrade to release 2.1 or release 3.0	Now
StarTalk FLASH - lower than release 1.5	Upgrade to release 1.7	Now
StarTalk - lower than release 2.04L	Upgrade to release 2.04L	Now
StarTalk Mini	Manufacture Discontinued -No software design change	N/A
PRELUDE & CINPHONY ACD - lower than (2.00.22 (unbundled) and 2.00.23 (Norstar Applications Module)	Obtain release 2.00.22 and 2.00.23 from Cintech @ 1-800-944-3901	Now

NORTEL PROPRIETARY

Norstar Core Systems

Compact ICS and Modular ICS, Norstar 3X8, Compact 6X16, Modular 8X24, all software releases are Century Compliant. Note that Norstar Compact 6X16, and Modular 8X24 systems are Manufacture Discontinued.

Norstar Voice Mail

The Norstar Voice Mail release 1.0 report will show the Year 2000 as "100" instead of "00". The voice mail operation is unaffected, but the report will continue to display dates as stated.

This situation was addressed in Norstar Voice Mail 2.0, which was available in July 1996. Norstar Voice Mail 3.0 is Century Compliant. Customers with Norstar Voice Mail releases lower than 2.0 must upgrade to Voice Mail 2.1 or purchase Voice Mail 3.0.

StarTalk FLASH

All StarTalk FLASH releases that are prior to the StarTalk FLASH 1.5 software release will show the Year 2000 as "100" instead of "00". The year 2001 will show "101". The voice mail operation is unaffected, but the report will continue to display dates as stated.

The situation was addressed in the release of StarTalk FLASH 1.5, which makes it compatible with the CICS 2.0 and MICS 2.0 release. Customers with StarTalk FLASH releases lower than 1.5 must upgrade to release 1.7 (latest release) to achieve Century Compliance.

StarTalk - Manufacture Discontinued

All StarTalk products exhibit the following state when the date changes to January 1, 2000. The internal clock gets stuck at the year 1999, although the day and date will rollover to January 1 properly. The voice mail operation is unaffected, but the reports will contain date errors.

This situation was addressed in the StarTalk upissue release 2.04L. Customers lower than release 2.04L must upgrade to release 2.04L to achieve Century Compliance.

StarTalk Mini - Manufacture Discontinued

All StarTalk Mini products exhibit the following state when the date changes to January 1, 2000. The internal clock gets stuck at the year 1999, although the day and date will rollover to January 1 properly. The voice mail operation is unaffected, but the reports will contain date errors.

Since this product has been Manufacture Discontinued, there will not be any product development to make it Century Compliant.

PRELUDE and CINPHONY ACD

The versions of Norstar-PLUS PRELUDE and CINPHONY ACD designated 2.00.22 (unbundled) and 2.00.23 (Norstar Application Module based) will be Century Compliant.

Those using versions of PRELUDE and CINPHONY ACD prior to 2.00.23 and 2.00.23 can upgrade their software to Norstar-PLUS PRELUDE and CINPHONY ACD Release 2.00.22 (unbundled) and 2.00.23 (Norstar Application Module based). Customers who remain within their initial year of warranty or have an active Software Maintenance Contract purchased from Cintech Tele-Management Systems as of January 1, 2000, will be provided the upgrade at no additional charge. Customers who are out of warranty will be eligible for the upgrade after reactivating their Cintech Software Maintenance Contract.

Inquiries on updating to Release 2.00.22 or 2.00.23 should be directed to Cintech Support 1-800-944-3901.

Remainder of Norstar Product Line

The remainder of the Norstar product line is Century Compliant.

Future Norstar Products

Century Compliance testing has been added to the Norstar Product Verification test suite to achieve Century Compliance for new products being developed.

Third-Party PC based Applications

Nortel is not responsible for century compliance of third-party PC based applications which interface with the Norstar system. Please contact your vendor for century compliance information.

Vantage - Manufacture Discontinued

Since this product portfolio was Manufacture Discontinued in 1990, there will not be any product development to make it Century Compliant.

It should be noted that none of the Vantage phones have displays, and the date and time are only used in the SMDR records. All Vantage products will exhibit the following state when the date changes to January 1, 2000. The year will show 0000, although the time, day, and date will rollover to January 1 properly. The year 2001 will show 0001. The SMDR operation is unaffected, but the reports will continue to display dates as stated.

NORTEL

NORTHERN TELECOM

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